

## EXHIBIT B



**WR Grace**  
 Bankruptcy Form 10  
 Index Sheet

SR00000524

Claim Number: 00007026

Receive Date: 03/27/2003

**Multiple Claim Reference**

Claim Number _____	<input type="checkbox"/> MMPOC	Medical Monitoring Claim Form
	<input type="checkbox"/> PDPOC	Property Damage
	<input type="checkbox"/> NAPO	Non-Asbestos Claim Form
	<input type="checkbox"/>	Amended
Claim Number _____	<input type="checkbox"/> MMPOC	Medical Monitoring Claim Form
	<input type="checkbox"/> PDPOC	Property Damage
	<input type="checkbox"/> NAPO	Non-Asbestos Claim Form
	<input type="checkbox"/>	Amended

**Attorney Information**

Firm Number: 00310 Firm Name: Babst Calland Clements Zomnir

Attorney Number: 00182 Attorney Name: Norman E Gilkey

Zip Code: 15222

Cover Letter Location Number: SR00000524

Attachments Medical Monitoring	Attachments Property Damage	Non-Asbestos
<input type="checkbox"/> TBD	<input type="checkbox"/> TBD	<input checked="" type="checkbox"/> Other Attachments
<input type="checkbox"/> TBD	<input type="checkbox"/> TBD	
<input type="checkbox"/> TBD	<input type="checkbox"/> TBD	
<input type="checkbox"/> TBD	<input type="checkbox"/> TBD	
<input type="checkbox"/> TBD	<input type="checkbox"/> TBD	
	<input type="checkbox"/> Other Attachments	
<b>Other</b>	<input type="checkbox"/> Non-Standard Form	
	<input type="checkbox"/> Amended	
	<input type="checkbox"/> Post-Deadline Postmark Date	

Box/Batch: WRBF0028/WRBF0110

Document Number: WRBF005499

UNITED STATES BANKRUPTCY COURT FOR THE DISTRICT OF Delaware		GRACE NON-ASBESTOS PROOF OF CLAIM FORM
Name of Debtor: <sup>1</sup> W. R. Grace & Co.	Case Number 01-1139	THIS SPACE IS FOR COURT USE ONLY
NOTE: Do not use this form to assert an Asbestos Personal Injury Claim, a Settled Asbestos Claim or a Zonolite Attic Insulation Claim. These claims will be subject to a separate claims submission process. This form should also not be used to file a claim for an Asbestos Property Damage Claim or Medical Monitoring Claim. A specialized proof of claim form for each of these claims should be filed.		
Name of Creditor (The person or other entity to whom the Debtor owes money or property): Kennametal Inc.	<input type="checkbox"/> Check box if you are aware that anyone else has filed a proof of claim relating to your claim. Attach copy of statement giving particulars. <input type="checkbox"/> Check box if you have never received any notices from the bankruptcy court in this case. <input type="checkbox"/> Check box if the address differs from the address on the envelope sent to you by the court.	
Name and address where notices should be sent: c/o Norman E. Gilkey, Esquire Babst, Calland, Clements & Zomnir, PC Two Gateway Center, 8th Floor Pittsburgh, PA 15222 (412) 394-5400 ngilkey@bccz.com	Account or other number by which creditor identifies Debtor: Check here <input type="checkbox"/> replaces if this claim <input type="checkbox"/> amends a previously filed claim, dated: _____	
Corporate Name, Common Name, and/or d/b/a name of specific Debtor against whom the claim is asserted: W. R. Grace & Co.		
1. Basis for Claim <input type="checkbox"/> Goods sold <input type="checkbox"/> Services performed (Claim for Contribution) <input checked="" type="checkbox"/> Environmental liability (see attachments) <input type="checkbox"/> Money loaned <input type="checkbox"/> Non-asbestos personal injury/wrongful death <input type="checkbox"/> Taxes <input type="checkbox"/> Other _____ <input type="checkbox"/> Retiree benefits as defined in 11 U.S.C. § 1114(a) <input type="checkbox"/> Wages, salaries, and compensation (fill out below) Your SS #: _____ Unpaid compensation for services performed from _____ to _____ (date)		
2. Date debt was incurred: On or prior to May 15, 2000 3. If court judgment, date obtained: _____ 4. Total Amount of Claim at Time Case Filed: <u>up to an estimated \$40 million</u> (see attachment) If all or part of your claim is secured or entitled to priority, also complete Item 5 below. <input type="checkbox"/> Check this box if claim includes interest or other charges in addition to the principal amount of the claim. Attach itemized statement of all interest or additional charges.		
5. Classification of Claim. Under the Bankruptcy Code all claims are classified as one or more of the following: (1) Unsecured Nonpriority, (2) Unsecured Priority, (3) Secured. It is possible for part of a claim to be in one category and part in another. CHECK THE APPROPRIATE BOX OR BOXES that best describe your claim and STATE THE AMOUNT OF THE CLAIM AT TIME CASE FILED. <input type="checkbox"/> SECURED CLAIM (check this box if your claim is secured by collateral, including a right of setoff). Brief Description of Collateral: <input type="checkbox"/> Real Estate <input type="checkbox"/> Other (Describe briefly) _____ Amount of arrearage and other charges <u>at time case filed</u> included in secured claim above, if any: \$ _____ Attach evidence of perfection of security interest <input checked="" type="checkbox"/> UNSECURED NONPRIORITY CLAIM A claim is unsecured if there is no collateral or lien on property of the debtor securing the claim or to the extent that the value of such property is less than the amount of the claim. <input type="checkbox"/> UNSECURED PRIORITY CLAIM - Specify the priority of the claim. <input type="checkbox"/> Wages, salaries, or commissions (up to \$4650), earned not more than 90 days before filing of the bankruptcy petition or cessation of the debtor's business, whichever is earlier - 11 U.S.C. § 507(a)(3). <input type="checkbox"/> Contributions to an employee benefit plan - 11 U.S.C. § 507(a)(4). <input type="checkbox"/> Taxes or penalties of governmental units - 11 U.S.C. § 507(a)(7). <input type="checkbox"/> Other - Specify applicable paragraph of 11 U.S.C. § 507(a)(____).		
6. Credits: The amount of all payments on this claim has been credited and deducted for the purpose of making this proof of claim. 7. Supporting Documents: <u>Attach copies of supporting documents</u> , such as promissory notes, purchase orders, invoices, itemized statements of running accounts, contracts, court judgments, mortgages, security agreements and evidence of perfection of lien. DO NOT SEND ORIGINAL DOCUMENTS. If the documents are not available, explain. If the documents are voluminous, attach a summary. 8. Acknowledgement: Upon receipt and processing of this Proof of Claim, you will receive an acknowledgment card indicating the date of filing and your unique claim number. If you want a file stamped copy of the Proof of Claim form itself, enclose a self addressed envelope and copy of this proof of claim form.		This Space is for Court Use Only
Date: <u>3/26/03</u> Sign and print the name and title, if any, of the creditor or other person authorized to file this claim (attach copy of power of attorney, if any): <u>Norman E. Gilkey, Esquire Counsel to Client</u>		
		WR Grace BF.28.110.5499 00007026 SR=524

REC'D MAR 27 2003

<sup>1</sup> See General Instructions and Claims Bar Date Notice and its exhibits for names of all Debtors and "other names" used by the Debtors.

## **SPECIFIC INSTRUCTIONS FOR COMPLETING GRACE NON-ASBESTOS PROOF OF CLAIM FORMS**

*The instructions and definitions below are general explanations of the law. In particular types of cases or circumstances, there may be exceptions to these general rules.*

This Proof of Claim form is for Creditors who have **Non-Asbestos Claims** against any of the Debtors. **Non-Asbestos Claims** are any claims against the Debtors as of a time immediately preceding the commencement of the Chapter 11 cases on April 2, 2001 other than Asbestos Personal Injury Claims, Asbestos Property Damage Claims, Zonolite Attic Insulation Claims, Settled Asbestos Claims or Medical Monitoring Claims, as defined on the enclosed General Instructions. More specifically, **Non-Asbestos Claims** are those claims against one or more of the Debtors, whether in the nature of or sounding in tort, contract, warranty or any other theory of law or equity for, relating to or arising by reason of, directly or indirectly, any injury, damage or economic loss caused or allegedly caused directly or indirectly by any of the Debtors or any products or materials manufactured, sold, supplied, produced, specified, selected, distributed or in any way marketed by one or more of the Debtors and arising or allegedly arising directly or indirectly, from acts or omissions of one or more of the Debtors, including, but not limited to, all claims, debts, obligations or liabilities for compensatory and punitive damages.

**Administrative Expenses:** Those claims for, among other things, the actual, necessary costs and expenses of preserving the estate as defined in Section 503 of the Bankruptcy Code that arose after the commencement of the case. A request for payment of an administrative expense may be filed pursuant to Section 503 of the Bankruptcy Code. This form should not be used to make a claim for an administrative expense.

**Secured Claim:** A claim is a secured claim to the extent that the creditor has a lien on property of the debtor (collateral) that gives the creditor the right to be paid from that property before creditors who do not have liens on the property. Examples of liens are a mortgage on real estate and a security interest in a car, truck, boat, television set, or other item of property. A lien may have been obtained through a court proceeding before the bankruptcy case began; in some states a court judgment is a lien. In addition, to the extent a creditor also owes money to the debtor (has a right to setoff), the creditor's claim may be a secured claim. (See also Unsecured Claim.)

**Unsecured Claim:** If a claim is not a secured claim, it is an unsecured claim. Unsecured claims are those claims for which a creditor has no lien on the debtor's property or the property on which a creditor has a lien is not worth enough to pay the creditor in full.

**Unsecured Nonpriority Claim:** Certain types of unsecured claims are given priority, so they are to be paid in bankruptcy cases before most other unsecured claims (if there is sufficient money or property available to pay these claims). The most common types of priority claims are listed on the proof of claim form. Unsecured claims that are not specifically given priority status by the bankruptcy laws are classified as **Unsecured Nonpriority Claims**.

**Information about Creditor:** Complete this section giving the name, address, and telephone number of the creditor to whom the debtor owes money or property, and the debtor's account number, if any. If anyone else has already filed a proof of claim relating to this debt, if you never received notices from the court which sent notice, or if this proof of claim replaces or amends a proof of claim that was already filed, check the appropriate box on the form.

1. **Basis for Claim:** Check the type of debt for which the proof of claim is being filed. If the type of debt is not listed, check "Other" and briefly describe the type of debt. If you were an employee of the debtor, fill in your social security number and the dates of work for which you were not paid.
2. **Date Debt Incurred:** Fill in the date the debt was first owed by the debtor.
3. **Court Judgments:** If you have a court judgment for this debt, state the date the court entered the judgment.
4. **Amount of Claim:** Insert the amount of claim at the time the case was filed in the appropriate box based on your selected Classification of Claim in item 5. If interest or other charges in addition to the principal amount of the claim are included, check the appropriate place on the form and attach an itemization of the interest and charges.
5. **Classification of Claim:** Check either Secured, Unsecured Nonpriority or Unsecured Priority as appropriate. (See Definitions above.)

**Unsecured Priority Claim:** Check the appropriate place if you have an unsecured priority claim, and state the amount entitled to priority. (See Definitions, above). A claim may be partly priority and partly nonpriority if, for example, the claim is for more than the amount given priority by the law. Check the appropriate place to specify the type of priority claim.

6. **Credits:** By signing this proof of claim, you are stating under oath that in calculating the amount of your claim, you have given the debtor credit for all payments received from the debtor.
7. **Supporting Documents:** You must attach to this proof of claim form, copies of documents that show the debtor owes the debt claimed or, if the documents are too lengthy, a summary of those documents. If documents are not available, you must attach an explanation of why they are not available.

*Be sure to date the claim and place original signature of claimant or person making claim for creditor where indicated at the bottom of the claim form. Please type or print name of individual under the signature. Be sure all items are answered on the claim form. If not applicable, insert "Not Applicable".*

RETURN CLAIM FORM (WITH ATTACHMENTS, IF ANY) TO THE FOLLOWING CLAIMS AGENT FOR THE DEBTORS:

Claims Processing Agent  
Re: W. R. Grace & Co. Bankruptcy  
P.O. Box 1620  
Faribault, MN 55021-1620

The Bar Date for filing all **NON-ASBESTOS CLAIMS** against the Debtors is March 31, 2003 at 4:00 p.m. Eastern Time.

**W.R. Grace & Co., et al., Debtors.**  
**Jointly Administered Chapter 11**  
**Case No. 01-01139 (JKF)**

**KENNAMETAL INC. PROOF OF CLAIM**  
**SUMMARY OF ATTACHED SUPPORTING DOCUMENTS**

The following documents are attached hereto in support of Kennametal Inc.'s foregoing Proof of Claim:

- 1) United States Environmental Protection Agency, Region II – Explanation of Significant Differences – LI Tungsten Superfund Site, Glen Cove, New York, November, 2002
  - This document estimates the final cost of the proposed remedy at the LI Tungsten Superfund Site.
  - Final cost is estimated to be up to \$40,000,000.00.
- 2) United States Environmental Protection Agency, Region II – September 29, 2000 Administrative Order for Remedial Action, Index Number CERCLA -02-2000-2037 (with attachments thereto, including Attachment 5, which is the United States Environmental Protection Agency, Region II – May 15, 2000 Administrative Order for Remedial Design, Index Number CERCLA-02-2000-2013).
  - These documents affix joint and several liability upon various entities for the proposed remediation at the LI Tungsten Superfund Site.

NOTE: By its filing of this Proof of Claim, Kennametal Inc. is not admitting any liability associated with the LI Tungsten Superfund Site, the September 29, 2000 Administrative Order and/or the May 15, 2000 Administrative Order; and Kennametal Inc. preserves any and all of its rights associated therewith, without limitation.



## Explanation of Significant Differences

### LI TUNGSTEN SUPERFUND SITE

#### Glen Cove, New York

U. S. Environmental Protection Agency  
Region 2

November 2002

#### INTRODUCTION

In accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), if the Environmental Protection Agency (EPA) selects a remedial action and, thereafter, it determined there is a significant change with respect to that action, an explanation of the significant differences and the reasons for such changes must be published.

EPA issued a Record of Decision (ROD) in 1999 with regard to the Li Tungsten Superfund site (Site), located in the City of Glen Cove, Nassau County, New York. The remedy selected in the ROD called for, among other things, the excavation of soil contaminated with radionuclides and heavy metals. At the time of the ROD, the amount of soil to be excavated was estimated to be approximately 69,400 cubic yards (cy).

This Explanation of Significant Differences (ESD) describes an increase in the estimated volume of contaminated soil which requires excavation and disposal from the estimated amount specified in the ROD. This increase in soil volume is based on actual excavation of certain areas of the Site and refinements to estimated excavation volumes in other areas based on additional sampling and analysis. This ESD also presents revised cost information resulting from new developments that have occurred since the selection of the Site remedy in 1999.

This ESD will become part of the Administrative

Record file for the Site. The entire Administrative Record for the Site includes, among other things, the ROD and other relevant documents. These documents are available for review at the following location:

Glen Cove Public Library  
Reference Section  
4 Glen Cove Avenue  
Glen Cove, NY 11542  
(516) 676-2130

Hours: Mon-Thurs, 9am-9pm  
Friday, 9am-5pm  
Saturday, 9am -1pm

The Administrative Record file is also available for public review at the EPA Region II office at the following location:

U. S. Environmental Protection Agency  
290 Broadway, Floor 18  
New York, New York 10007

Hours: 9 am - 5 pm  
Monday - Friday

The changes in the volume estimates and the anticipated increase in the cost of the remedy, as presented in this ESD, are not considered by EPA and the New York State Department of Environmental Conservation (NYSDEC) to have fundamentally altered the remedy selected in the ROD. The remedy remains protective of human health and the environment and complies with federal and state requirements that were identified in the ROD.

Should there be any questions regarding this

Explanation of Significant Differences, please contact:

Edward Als  
Emergency and Remedial Response Division  
U. S. Environmental Protection Agency  
290 Broadway, Floor 20  
New York, New York 10007  
(212) 637-4272  
als.ed@epa.gov

#### **SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY**

The Site is located in the City of Glen Cove, Nassau County, New York. It consists of two separate tracts of land, one being the 26-acre former Li Tungsten facility property and the second being two areas (and any adjacent land where contamination extends) of the 23-acre former Captain's Cove condominium development/Garvies Point dump property. The former Li Tungsten facility property is located at 63 Herbyhill Road, and the Captain's Cove property is located approximately 0.5 mile to its west on Garvies Point Road.

The processing of tungsten and other metals began at the former Li Tungsten facility in 1942 and ended in 1985. Operations consisted mainly of processing tungsten ore concentrates and scrap metal containing tungsten into ammonium paratungstate (APT) and formulating APT into tungsten powder and tungsten carbide powder.

The Captain's Cove property was used as a dump site for the disposal of incinerator ash, sewage sludge, rubbish, household debris, dredged sediments from Glen Cove Creek, and industrial wastes, including wastes transferred from the Li Tungsten facility, from approximately the late 1950's to the late 1970's. The property was purchased by Village Green Realty in 1983 to be developed as a residential condominium project. Development efforts were abandoned in the mid-1980's when the NYSDEC designated the Captain's Cove property as a State Superfund site.

Both Site properties are located in a mostly commercial area along the north bank of Glen Cove Creek. The Creek area has been industrialized since the mid-1800's. The immediate area now includes

light industry, commercial businesses, a sewage treatment plant, a Nassau County public works facility, and State or Federally-designated hazardous waste sites. Other land uses in the vicinity of the Site include marinas, yacht clubs, beaches, and the Garvies Point Preserve. There are residences within 100 feet of the former Li Tungsten facility property, along Janet Lane and The Place, and within 1,000 feet of Captain's Cove property on McLoughlin Street.

The City of Glen Cove, which has been designated as an EPA Brownfields Showcase Community, is presently implementing its 1998 Glen Cove Creek Revitalization Plan involving more than 200 acres surrounding the Creek. The Revitalization Plan projects the future use of the area as commercial redevelopment, featuring shops, restaurants, parking facilities, museums, and a hotel/conference center.

In October 1992, the Site was placed on the National Priorities List, EPA's list of significant sites. In 1993, EPA initiated a Remedial Investigation and Feasibility Study (RI/FS) to define the nature and extent of contamination on Parcels A, B and C of the former Li Tungsten facility property. Later, in 1995, EPA extended the Site definition to include the two discrete radioactive waste areas at the Captain's Cove property, known as Areas A and G, as part of the overall Site, after sampling revealed that the radioactive residuals profile found there was sufficient similarity to that of the ores and residuals found at the former Li Tungsten facility property. Areas A and G comprise about 3 acres of the Captain's Cove property and are located in the northwestern and eastern corners of the property, respectively. EPA's RI/FS of the Li Tungsten and Captain's Cove properties revealed many contaminants left behind as a result of prior Site practices. These contaminants pose a risk to human health and/or the environment. The primary contaminant categories of concern at the Site are radionuclides and heavy metals associated with spent ore residuals.

Based on the results of the RI/FS, a ROD was issued by EPA on September 30, 1999, which selected a remedy for the Site. The major components of the selected remedy are as follows:

Excavation of soils and sediments

- contaminated above cleanup levels;
- Separation of radionuclide-contaminated soil from nonradionuclide soil contaminated with heavy metals;
- Off-Site disposal of both radionuclide and metals-contaminated soil at appropriately licensed facilities;
- Off-Site disposal of radioactive waste located in the Dickson Warehouse (located at the Li Tungsten facility) at an appropriately licensed facility;
- Building demolition at the Li Tungsten facility;
- Storm sewer and sump clean outs at the Li Tungsten facility;
- Institutional controls governing the future use of the Site;
- Decommissioning of Industrial Well N1917 on Parcel A; and
- Collection and off-site disposal of contaminated surface water from Parcels B and C.

The ROD set forth that in the event that the radionuclide-contaminated soils could not be separated from the nonradionuclide, metals contaminated soils in a cost-effective manner, all the excavated soils would be disposed of together at appropriately licensed facilities.

The ROD also included provisions to expedite the implementation of the soil excavation activities for the southern portion of the former Li Tungsten facility property, which encompassed Parcel A and the lower portions of Parcels B and C, by EPA funding the remediation of these areas using Federal Superfund monies. In the ROD, the estimated volume of soil targeted for excavation in these areas was approximately 5,000-6,000 cy, which represented a relatively small fraction of the total contaminated soil volume that needed to be addressed, based on EPA's best estimate at the time. Fast-tracking this portion of the remediation, which became known as "Phase 1," would accelerate the redevelopment of what the City of Glen Cove perceives to be the most important parcels of the Site with respect to the revitalization of the Creek area. Also, this approach was consistent with EPA's "Recycling Superfund Sites" initiative. Subsequently, EPA completed remediation of only Parcel A and lower Parcel C under Phase 1, and directed the identified potentially responsible parties, or PRPs, to remediate lower Parcel B, among other areas.

In May 2000, EPA issued a unilateral administrative

order (UAO) to the PRPs, directing them to perform the remedial design (RD) of the selected remedy for the Li Tungsten property, not including Phase 1. In February 2001, EPA directed the PRPs to expand the RD to include the southern portion of Parcel B on the Li Tungsten facility. The RD was completed in April 2002.

In September 2000, EPA also signed an agreement with the City of Glen Cove, which is a PRP at the Captain's Cove portion of the Site, in which the City agreed to provide up to \$3 million to EPA to fund EPA's performance of a portion of the remedy selected for the Captain's Cove property. Negotiations with the remaining PRPs concerning the remaining elements of the selected remedial action (RA) were not successful, resulting in EPA's issuance in September 2000 of a second UAO which directed them to complete those portions of the remedy not being performed by EPA itself. EPA's February 2001 directive also directs the PRPs to perform additional portions of the remedy.

In May 2001, EPA completed the excavation and segregation of radioactively-contaminated soils on Parcel A and lower Parcel C of the Li Tungsten facility. To complete this action, approximately 12,000 cy of nonradioactive, heavy metals-contaminated soils were trucked off-site for disposal and approximately 1,700 cy of radioactively-contaminated soils were stored on-site in the Dickson Warehouse. The PRPs are responsible for remediating Parcel B and upper Parcel C and disposing of the radioactive wastes stored in the Dickson Warehouse. The PRPs' work plan for these tasks is currently under review.

EPA has completed the excavation of approximately 35,700 cy and approximately 16,100 cy of contaminated soils from Area A and Area G, respectively, at the Captain's Cove property. Most of this contaminated soil is presently staged at Captain's Cove awaiting off-site disposal by the PRPs. In the late Fall of 2002, EPA plans to excavate contaminated soils at Area "A prime", or A', which is an area adjacent to the northwest corner of Area A. The Area A' soils lie outside the Captain's Cove property and under Garvies Point Road and the Fox Navigation Ferry access road. The discovery of the Area A' contaminated soils is described further below.



#### DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE REASONS FOR THOSE DIFFERENCES

The September 1999 ROD included the following volume estimates of contaminated materials requiring excavation and off-site disposal: at the former Li Tungsten facility property, it was estimated that 18,300 cubic yards (cy) of radioactive wastes and 17,300 cy of nonradioactive, metals-contaminated wastes would be excavated for disposal. At the Captain's Cove property, it was estimated that 13,200 cy of radioactive wastes and 20,600 cy of nonradioactive, metals-contaminated wastes would be excavated for disposal. Therefore, the total volumetric estimate in the ROD for wastes requiring off-site disposal was 69,400 cy (refer to table for estimated soil volumes by location).

Since the issuance of the ROD in 1999, a significant amount of the required excavation work has been performed by EPA, utilizing PRP funds and the Superfund.

EPA has excavated approximately 35,700 cy and 16,100 cy from Areas A and G, respectively, on the Captain's Cove property. During the excavation of Areas A and G, EPA determined from actual field conditions that the Area A contamination extended beyond the boundary of the property into adjacent areas. This contamination was not detected during the RI/FS nor known at the time of the issuance of the ROD. This newly identified contamination, which EPA has designated as Area A' and which is of the same type as that which EPA is addressing at Areas A and G, represents an additional volume of material (estimated at 15,000 cy) that will require excavation and disposal.

In addition, a group of PRPs has completed the RD for Parcel B and the northern half of Parcel C at the former Li Tungsten facility property. The RD provided additional data which enabled EPA to update the estimate of the ex situ volume of contaminated soils on those parcels to 40,400 cy.

Thus, the current estimate of the total excavation and disposal volume of contaminated soils from the Site is 132,100 cy, which represents a significant increase in the 69,400 cy estimate provided in the ROD. The amount of materials that have already been excavated and either staged or sent for off-site disposal equals approximately 72,800 cy (56,500 cy

of radioactive wastes and 16,300 cy of non-radioactive, metals-contaminated wastes). EPA estimates that there is approximately 59,300 cy remaining to be excavated that will require off-site disposal. This estimate includes materials to be excavated from Parcel B and upper Parcel C of the Li Tungsten property, the remainder of Area G on Captain's Cove, and Area A'.

While the volume of wastes requiring excavation and disposal has increased significantly from the ROD estimate, present day costs for waste transportation and disposal are generally less than the cost figures used to estimate the total remedy cost of \$28 million as cited in the ROD. EPA presently estimates that the final cost of the remedy, after accounting for the increased volumes of excavated wastes and based on current price quotes for transportation and disposal, will be in the range of \$30 - \$40 million, primarily depending on the radioactive waste disposal facility utilized. EPA guidance suggests that the estimated cost of a remedy as specified in a ROD should be within 50% of the actual remedy cost. EPA believes that the actual remedy cost (estimated between \$30 - \$40 million) will be within the 50% variance suggested in the guidance.

#### SUPPORT AGENCY COMMENTS

NYSDEC is aware of the revised volume and cost estimates associated with implementing the remedy selected in the September 1999 ROD, and it agrees that EPA's determination in the ROD that this material should be excavated and disposed of off-site remains the proper decision.

#### AFFIRMATION OF STATUTORY DETERMINATIONS

Considering the new information that has been developed, EPA and NYSDEC have both determined that the selected remedy remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, the remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

EPA and NYSDEC believe that a change in the scope of the remedy has occurred in which the

increased volume of soil requiring excavation and the increase in project cost associated with this change nevertheless do not fundamentally alter the remedy selected in the ROD or its appropriateness. Because of the extremely long half-lives (Th-232 has a half-life of 14 billion years) of the radionuclides of concern which are located in an urban setting and which overlie Long Island's sole source aquifer, segregating and permanently removing the contaminated soils from the Site to acceptable off-site disposal facilities remains the appropriate remedy.

#### PUBLIC PARTICIPATION ACTIVITIES

In accordance with the NCP, a formal public comment period is not required when issuing an ESD. However, EPA is announcing the availability of this ESD in several local newspapers, and there will be a public availability session relating to this ESD on November 20<sup>th</sup>, from 2-4 PM and from 6-8 PM in the City Council chamber, City Hall, 9 Glen Street, Glen Cove. In addition, as noted above, questions regarding this ESD may be directed to Edward Als of EPA, whose mailing address, e-mail address, and phone number are set forth above.

VOLUME SUMMARY TABLE\*

LOCATION	ROD ESTIMATE	PRESENT ESTIMATE	STATUS
Phase 1 (Parcel A and Lower Parcel C at former LI Tungsten Facility Property)	5,600 cy	12,000 cy	Excavation completed - 12,000 cy nonradioactive metals-contaminated soil disposed offsite; 1,700 cy radioactive soil staged in Dickson Warehouse for off-site disposal**
Dickson Warehouse storage	~ 3,100 cy	~ 9,000 cy	Miscellaneous Site wastes exceeding radioactive criteria staged for off-site disposal, including the 1,700 cy radioactive soil excavated in Phase 1
Remainder at the Former LI Tungsten Facility Property - (Parcel B and Upper Parcel C)	26,900 cy	40,400 cy (PRP RD Estimate)	Yet to be excavated
Captain's Cove - Area A	23,100 cy	35,700 cy	Excavation completed - 700 cy nonradioactive metals-contaminated soil disposed offsite; 35,000 cy radioactive soil staged on Captain's Cove for off-site disposal.
Captain's Cove - Area G	10,700 cy	20,000 cy	Excavation nearly completed - 3,600 cy nonradioactive metals-contaminated soil and 12,500 cy radioactive soil staged on Captain's Cove for off-site disposal. Some contaminated material (~3,900 cy) remains buried near Garvies Point Road, and also adjacent to Glen Cove Creek bulkhead underground infrastructure.
Captain's Cove - Area A'	0 (not identified)	15,000 cy	Yet to be excavated
<b>TOTAL</b>	<b>69,400 cy</b>	<b>132,100 cy</b>	

\*all volume estimates are ex situ, i.e., post excavation

\*\*This volume of radioactive material is accounted for under "Dickson Warehouse Storage", immediately below.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II

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-----X
IN THE MATTER OF THE LI TUNGSTEN      )
SUPERFUND SITE, GLEN COVE, NEW YORK:  )
                                         )
Adamas Carbide Corporation,            )
Advanced Metallurgy, Inc.,            )
  a.k.a. AMI DoDuco, Inc.,            )
Alloy Carbide Company,                )
American National Carbide Company,    )
Carbidie, Inc.,                      )
Chi Mei Corporation,                  )
Contacts, Metals and Welding, Inc.,    )
  a.k.a. CMW, Inc.,                  )
County of Nassau, New York,           )
Cyprus Amax Minerals Company,          )
Electrical Contacts, Ltd.,            )
Ex-Cell-O Machine Tool, Inc.,         )
Fansteel, Inc.,                      )
General Electric Company,             )
General Carbide Corporation,          )
Hughes Christensen Company, Inc.,     )
Hydro Carbide Corporation,            )
Kennametal Inc.,                     )
Kulite Tungsten Corporation,          )
Minmetals, Inc.,                     )
Philips Elmet Corporation,            )
Sandvik Inc.,                        )
TDY Holdings, Inc., as a successor to  )
  Teledyne, Inc.,                    )
Valenite-Modco, Ltd.,                )
Vermont American Corporation,         )
Vista Metals, Inc.,                  )
VR/Wesson Company,                   )
W.R. Grace & Co., and                 )
Wah Chang Smelting and Refining      )
  Company of America, Inc.,          )
                                         )
Respondents.                          )
                                         )
Proceeding Under Section 106(a) of the )
Comprehensive Environmental Response,  )
Compensation, and Liability Act of 1980,)
as amended (42 U.S.C. § 9606(a)).    )
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ADMINISTRATIVE ORDER FOR REMEDIAL ACTION

I. INTRODUCTION AND JURISDICTION

1. This Administrative Order ("Order") is issued by the United States Environmental Protection Agency ("EPA") to the above-captioned Respondents ("Respondents") to require Respondents to perform portions of the remedial action for the remedy described in EPA's Record of Decision dated September 30, 1999 for the Li Tungsten Superfund site (the "Site"), as set forth herein. This Order is issued by EPA under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580 (52 Fed. Reg. 2926, January 29, 1987), and was further delegated to EPA Regional Administrators on September 13, 1987.

2. EPA has notified the New York State Department of Environmental Conservation ("NYSDEC") of this Order pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

3. This Order shall apply to and be binding upon each Respondent, its agents, successors, assigns, officers, directors, and principals. Respondents are jointly and severally responsible for carrying out all activities required by this Order, except that the Work requirements under this Order which relate only to the Li Tungsten Property and not the Captain's Cove Property are not applicable to Respondent the County of Nassau, New York. Compliance or noncompliance by one or more Respondent with any provision of this Order shall not excuse or justify noncompliance by any other Respondent. No change in the ownership, corporate status, or other control of any Respondent shall alter any of the Respondents' responsibilities under this Order.

4. Each Respondent shall provide a copy of this Order to any prospective owners or successors before a controlling interest in Respondent's assets, property rights, or stock are transferred to the prospective owner or successor. Respondents shall provide a copy of this Order to each contractor, subcontractor, laboratory or consultant retained to perform any Work under this Order, within thirty (30) days after the effective date of this Order or on the date such services are retained, whichever date occurs later. Respondents shall also provide a copy of this Order to each person representing any Respondent with respect to the Site

or the Work and shall condition all contracts and subcontracts entered into hereunder upon performance of the Work in conformity with the terms and conditions of this Order. With respect to the activities undertaken pursuant to this Order, each contractor and subcontractor shall be deemed to be related by contract to the Respondents within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, Respondents are responsible to EPA for compliance with this Order and for ensuring that their contractors, subcontractors and agents comply with this Order and perform any Work in accordance with this Order.

### III. DEFINITIONS

5. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or its implementing regulations. Whenever terms listed below are used in this Order the following definitions shall apply:

a. "Captain's Cove Property" shall mean the parcel approximately 23 acres in size known as the Captain's Cove Condominium Inactive Hazardous Waste Disposal Site, located approximately 1,000 feet west of the Li Tungsten Property on Garvies Point Road (A map of Site properties is attached hereto as Attachment 1). The Captain's Cove Property is designated as Site #1-30-032 on the New York State Registry of Inactive Hazardous Waste Disposal Sites.

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675.

c. "Day" shall mean a calendar day unless expressly stated to be a business day. "Business day" shall mean a day other than a Saturday, Sunday, or federal holiday. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next business day.

d. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

e. "Initial Captain's Cove Work" means the following activities: (1) performance of any further delineation of the areas designated as Areas A and G of the Captain's Cove Property (see Attachment 2 to this Order) as EPA determines is necessary;

(2) excavation of the radionuclide-contaminated and non-radioactive metals-contaminated materials from Areas A and G of the Captain's Cove Property; (3) such steps as EPA deems appropriate to attempt to separate the radionuclide-contaminated materials excavated from Areas A and G from the non-radionuclide contaminated materials; (4) post-excavation sampling of Areas A and G of the Captain's Cove Property to ensure that cleanup levels have been met, and if they have not been met, such additional excavation as EPA determines is needed; (5) transportation and proper disposal of the non-radioactive metals-contaminated materials off-Site at an appropriate facility; (6) backfilling and regrading of Areas A and G as appropriate; and (7) any such design work as EPA deems appropriate to prepare for any of the activities referred to in items (1) through (6) of this subparagraph e. The "Initial Captain's Cove Work" does not include the transportation and disposal of the radionuclide-contaminated materials from the Captain's Cove Property to an off-site disposal location.

f. "Institutional Controls" means land and/or water use restrictions which may include, but need not be limited to, restrictions in the form of contractual agreements, deed restrictions, state or local laws, regulations, ordinances or other governmental action.

g. "Li Tungsten Property" shall mean the former Li Tungsten facility property, encompassing approximately 26 acres, located at 63 Herhill Road in the City of Glen Cove, New York (see Attachment 1).

h. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including any amendments thereto.

i. "NYSDEC" shall mean the New York State Department of Environmental Conservation and any successor departments or agencies of the State.

j. "Paragraph" shall mean a portion of this Order identified by an arabic numeral.

k. "Party" or "Parties" means EPA and/or Respondents.

l. "Performance Standards" means the cleanup standards and other measures of achievement of the goals of the Remedial Action as set forth in the "Remedial Action Objectives" section of the ROD, the "Compliance With ARARs" portion of the "Statutory

Determinations" section of the ROD, Table 15 of the ROD, and the SOW.

m. "Record of Decision" or "ROD" shall mean the EPA document which selected a remedy at the Site and which was issued on September 30, 1999. A copy of the ROD (not including the Appendices other than Table 15) is attached hereto as Attachment 3.

n. "Remedial Action" shall mean those activities, except for Operation and Maintenance, to be undertaken to implement the remedy set forth in the ROD, in accordance with the EPA-approved Final Design Report prepared pursuant to the RD UAO, the Statement of Work attached hereto as Attachment 4, and other plans approved by EPA. For purposes of this Order, "Remedial Action" does not include the following portions of the remedy selected by EPA in the ROD: (1) the Initial Captain's Cove Work, as defined above, except to the extent that EPA notifies Respondents in writing that EPA requires the Respondents to perform some portion of the Initial Captain's Cove Work; and (2) "Phase 1" as defined in Paragraph 15 below.

o. "Remedial Design" or "RD" shall mean those activities to be undertaken by the respondents to the RD UAO to develop the final plans and specifications for the Remedial Action pursuant to the EPA-approved Remedial Design Work Plan.

p. "Remedial Design Work Plan" shall mean the work plan for the design of certain portions of the remedy as developed pursuant to the requirements set forth in the RD UAO.

q. "RD UAO" shall mean the unilateral Administrative Order for Remedial Design, Index Number CERCLA-02-2000-2013, which was issued by EPA on May 15, 2000 directing twenty-eight parties to perform certain portions of the Remedial Design at the Site. A copy of the RD UAO is attached hereto as Attachment 5.

r. "Respondents" shall mean collectively all of the Respondents named in the caption of this Order, and individually any of the Respondents.

s. "Section" shall mean a portion of this Order identified by a roman numeral and includes one or more paragraphs.

t. "Site" shall mean (1) the Li Tungsten Property, and (2) any portion of the Captain's Cove Property where radioactive contamination exists.



u. "State" shall mean the State of New York.

v. "Statement of Work" or "SOW" shall mean the statement of work for the implementation of the Remedial Action for the Site, as described in the ROD. The SOW is attached hereto as Attachment 4.

w. "Supervising Contractor" shall mean the principal contractor retained by Respondents to supervise and direct the implementation of the Work under this Order.

x. "United States" shall mean the United States of America.

y. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), (2) any "pollutant or contaminant" under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33), (3) any "solid waste" under Section 1004(27) of the Resource Conservation and Recovery Act, ("RCRA") 42 U.S.C. § 6903(27), and (4) any mixture containing any of the constituents noted in (1), (2) or (3), above.

z. "Work" shall mean all activities Respondents are required to perform under this Order, except those required by Section XXI (Record Preservation).

#### IV. FINDINGS OF FACT AND CONCLUSIONS OF LAW

6. The Site is located in the City of Glen Cove, Nassau County, New York, and is comprised of two areas, the former Li Tungsten Corporation facility at Herhill Road and Dickson Lane, and certain portions of the former Captain's Cove Condominium development located approximately one-half mile west on Garvies Point Road. As a result of the processing of ores at the facility on the Li Tungsten Property, and the subsequent disposal of portions of the byproducts of that processing, elevated levels of radiation are present at the Li Tungsten Property and portions of the Captain's Cove Property.

7. In 1989 conditions at the Li Tungsten Property resulted in NYSDEC requesting that EPA perform a response action, and on July 21, 1989, EPA entered into an administrative order on consent (Index No. II CERCLA-90215) with Glen Cove Development Company, the owner of record of the Li Tungsten Property at that time. That order required Glen Cove Development Company to conduct a removal action at the Li Tungsten Property.

8. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA identified the Li Tungsten Property as part of the Site, and placed that portion of the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on October 14, 1992. 57 Fed. Reg. 47180.

9. Commencing in 1993, EPA performed a Remedial Investigation ("RI") at the Site, which confirmed the presence of arsenic, lead, polychlorinated biphenyls, radionuclides (including Radium-226 and Thorium-232), tetrachloroethylene, and trichloroethylene at the Site.

10. EPA determined in November, 1995 that radioactive material present on the Li Tungsten Property could appropriately be linked or aggregated for purposes of a coordinated response with radioactive material similar in nature which is located at the Captain's Cove Property, pursuant to Section 104(d)(4) of CERCLA, and therefore the Site was expanded to include those portions of the Captain's Cove Property where radioactive contamination exists.

11. In addition to the 1989 removal work performed by Glen Cove Development Company and the RI being performed by EPA, EPA performed other removal activities in phases from 1995 through 1998. The EPA removal work involved, among other things, the extraction and decontamination of 271 tanks and the demolition of several buildings at the Site.

12. The RI was completed in May 1998, and a draft Feasibility Study ("FS") report for the Site was thereafter completed by EPA in December 1998. A Proposed Plan for the Site was published in July of 1999, and the Site ROD was issued on September 30, 1999. The remedy selected in the ROD for the Site includes, inter alia, a plan for addressing radioactive materials located at the Site, in addition to other hazardous substances located at the Site, including addressing soil and groundwater contamination at the Site. With regard to soils, the remedy includes (a) the excavation of soils and sediments contaminated above cleanup levels, (b) the separation of radionuclide-contaminated soil from non-radionuclide soil contaminated with heavy metals, to the extent it can be accomplished in a cost-effective manner, and the appropriate off-Site disposal of all radionuclide and metals-contaminated soils at appropriately licensed facilities, including such disposal of radioactive waste currently contained in the Dickson Warehouse located at the Li Tungsten Property, (c) the demolition of buildings at the Li Tungsten Property, (d) storm sewer and sump clean outs at the Li Tungsten Property, (e) the decommissioning of an industrial well at the Li Tungsten Property, (f) the collection and proper off-site disposal of contaminated surface water from the Li Tungsten Property, and

(g) establishing institutional controls governing the future use of the Site. With regard to groundwater, the remedy includes the prevention or minimization of ingestion, dermal contact, and inhalation of metals-contaminated groundwater at the Li Tungsten Property that is above State and Federal Maximum Contaminant Levels, as well as the restoration of groundwater quality to levels which meet State and Federal standards. To achieve these objectives, the remedy requires a long-term groundwater monitoring program to assess the recovery of the Upper Glacial Aquifer after the soil remedy is implemented.

13. The Captain's Cove Property has been designated by NYSDEC as an inactive hazardous waste disposal site under Article 27, Title 13 of the Environmental Conservation Law of the State of New York. A separate RI and FS were conducted by the City of Glen Cove with respect to the non-radioactive portions of the Captain's Cove Property, and NYSDEC issued a decision document in March of 1999 selecting a remedy to address that area. The City Of Glen Cove is currently implementing that State-selected remedy at the Captain's Cove Property pursuant to an administrative order with the State.

14. The Li Tungsten Property and the Captain's Cove Property, which together comprise approximately 49 acres, are identified parcels included in a planned waterfront revitalization effort involving approximately 240 acres in Glen Cove, New York.

15. EPA has commenced the implementation of what is referred to as "Phase 1" of the remedy selected in the ROD. Phase 1 involves: (1) the excavation and collection of contaminated sediments and soils and the demolition of certain buildings (and the segregation of related debris) from an area designated as "Parcel A" on the Li Tungsten Property and from the southern portions of "Parcel B" and "Parcel C" on the Li Tungsten Property (as shown on the Map attached as Attachment 6); (2) off-site disposal of the non-radioactive metals-contaminated sediments, soils, and debris excavated, collected, or demolished pursuant to item (1) above; (3) interim storage on the Li Tungsten Property of the radioactive portion of the sediments, soils, and debris excavated or demolished pursuant to item (1) above; (4) storm sewer and sump clean outs at the Li Tungsten Property; and (5) the decommissioning of an industrial well on Parcel A. Phase 1 does not include any other portion of the remedy selected in the ROD, including, for example, excavation of contaminated sediments and soil from the northern portions of Parcels B and C or the off-site disposal of any radionuclide-contaminated materials.

16. On May 15, 2000, EPA issued the RD UAO, directing twenty eight parties to perform the remedial design of certain portions of the remedy selected in the ROD. Those parties are among the Respondents to this Order. The work required pursuant to the RD UAO is currently being performed.

17. The City of Glen Cove, New York has entered into an agreement with EPA pursuant to Section 122(h) of CERCLA, 42 U.S.C. § 9622(h), Index Number CERCLA-02-2000-2019, relating to the funding of the Initial Captain's Cove Work, as defined above. EPA expects to commence the Initial Captain's Cove Work in the fall of 2000.

18. Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in the ROD, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

19. Each Respondent is a "person" as defined under Section 101(21) of CERCLA, 42 U.S.C. § 9601(21). Each Respondent is a "liable" party as defined in Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is subject to this Order under Section 106(a) of CERCLA, 42 U.S.C. § 9606(a). Respondents County of Nassau, New York, TDY Holdings, Inc. (as successor to Teledyne, Inc.), Wah Chang Smelting and Refining Company of America, Inc. (in its own capacity and as successor to National Reconditioning Company and Nare Corporation), the United States Department of Commerce, the United States Department of Treasury, and the United States General Services Administration (as successors to various predecessor governmental entities) were owners and/or operators of all or a portion of the Site during a period when hazardous substances were disposed of there, within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2). Respondents TDY Holdings, Inc. and Wah Chang Smelting and Refining Company of America were also generators and transporters of hazardous substances disposed of at the Site within the meaning of Section 107(a)(3) and (4) of CERCLA, 42 U.S.C. § 9607(a)(3) and (4), and the United States Department of Treasury and the United States General Services Administration were also generators of hazardous substances disposed of at the Site, within the meaning of Section 107(a)(3) of CERCLA. The remaining Respondents were generators of hazardous substances disposed of at the Site, within the meaning of Section 107(a)(3) of CERCLA.

20. The substances listed in Paragraph 9 are "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

21. The Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

22. The past and present disposal and migration of hazardous substances at and from the Site are "releases" as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

23. The actions required by this Order are necessary to protect the public health, welfare, and the environment.

#### V. DETERMINATION

24. Based on the FINDINGS OF FACT and CONCLUSIONS OF LAW set forth above and the entirety of the administrative record, the Regional Administrator has determined that the release or threatened release of hazardous substances at the Site may present an imminent and substantial endangerment to the public health or welfare or the environment.

#### VI. ORDER

25. Based on the foregoing, Respondents are hereby ordered, jointly and severally (except as otherwise stated in Paragraph 3 above), to comply with all of the terms and provisions of this Order, including all attachments to this Order, all documents incorporated by reference into this Order, and all schedules and deadlines related thereto.

#### VII. NOTICE OF INTENT TO COMPLY

26. Each Respondent shall provide, not later than five (5) days after the effective date of this Order, written notice to the EPA addressees listed in Paragraph 55 below stating whether it will comply with the terms of this Order. If any Respondent does not unequivocally commit to perform the Work as provided by this Order, it shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Each Respondent's written notice shall describe, using facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by said Respondent under Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. §§ 9606(b) and 9607(c)(3). The absence of a response by EPA to the notice required by this Paragraph shall not be deemed to be an acceptance of any assertion by a Respondent.

VIII. WORK TO BE PERFORMED

27. Respondents shall give EPA fourteen (14) days advance notice of all field activities to be performed pursuant to this Order.

28. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by Respondents under this Order shall be under the direction and supervision of a professional engineer licensed in the State of New York (hereinafter, the "Supervising Contractor"), the selection of which shall be subject to approval by EPA. The Supervising Contractor, as well as all other contractors and subcontractors who engage in the "practice of engineering" at the Site on behalf of Respondents, as the "practice of engineering" is defined at Section 7201 of the New York State Education Law, must comply with all applicable New York State legal requirements regarding the practice of engineering within the State of New York, including all applicable requirements of the New York State Education Law and Business Corporation Law.

b. Within fifteen (15) days of EPA's approval of the Final Design Report, as prepared pursuant to the RD UAO, Respondents shall notify EPA in writing of the names, titles, and qualifications of all proposed Supervising Contractor(s), contractors and subcontractors, as well as all contractor/subcontractor key personnel, who are to perform the Work specified in the EPA-approved Final Design Report. Selection of any engineer, contractor, or subcontractor shall be subject to approval by EPA.

c. With regard to that portion of the Remedial Action which relates to the Captain's Cove Property, other than the Initial Captain's Cove Work, Respondents shall, within thirty (30) days of EPA's notification to Respondents to initiate said Work, notify EPA in writing, of the names, titles, and qualifications of all proposed Supervising Contractor(s), contractors and subcontractors, as well as all contractor/subcontractor key personnel, who are to perform that portion of the Remedial Action. Selection of any engineer, contractor, or subcontractor shall be subject to approval by EPA.

d. With regard to the Initial Captain's Cove Work, if EPA notifies Respondents in writing that it requires Respondents to perform some portion of the Initial Captain's Cove Work, then within thirty (30) days of such notification to Respondents, they shall notify EPA in writing of the names, titles, and qualifications of all proposed Supervising Contractor(s), contractors and subcontractors, as well as all contractor/

subcontractor key personnel, who are to perform that portion of the Initial Captain's Cove Work. Selection of any engineer, contractor, or subcontractor shall be subject to approval by EPA.

e. EPA will either approve each proposed Supervising Contractor(s), accompanied by an authorization to proceed, or issue a notice of disapproval. If EPA disapproves a proposed Supervising Contractor(s), EPA will notify Respondents in writing. Within fourteen (14) days of EPA's disapproval of any proposed contractor, Respondents shall submit to EPA a list of contractors (which does not include the contractor(s) previously disapproved by EPA) that would be acceptable to them, including the qualifications of each contractor. EPA will provide written notice of the names of any contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. Respondents may select any contractor from those not disapproved and shall notify EPA of the name of the contractor selected within twenty-one (21) days of EPA's authorization to proceed. If at any time after EPA approves a Supervising Contractor, Respondents propose to change that Supervising Contractor, Respondents shall give such notice to EPA and must obtain an approval and an authorization to proceed from EPA before the new Supervising Contractor performs, directs, or supervises any Work under this Order.

## 29. Remedial Action

a. Respondents shall implement and comply with the SOW, which is appended hereto as Attachment 4.

b. With regard to the Remedial Action relating to the Li Tungsten Property, Respondents shall award a contract for the Remedial Action within ten (10) days after EPA's approval of the Supervising Contractor for such Work. Within thirty (30) days of the award of the Remedial Action contract, Respondents shall submit to EPA and NYSDEC a work plan for the performance of the Remedial Action ("Remedial Action Work Plan") relating to the Li Tungsten Property. The Remedial Action Work Plan shall provide for construction and implementation of the remedy and achievement of the Performance Standards in accordance with the ROD and the SOW, as set forth in the respective design plans and specifications in the approved Final Design Report.

c. With regard to that portion of the Remedial Action which relates to the Captain's Cove Property, other than the Initial Captain's Cove Work, Respondents shall award a contract for such Work within ten (10) days after EPA's approval of the Supervising Contractor for such Work. Within thirty (30) days of the award of the Remedial Action contract, Respondents shall submit to EPA and NYSDEC a Remedial Action Work Plan for the performance of

said portion of the Remedial Action. The Remedial Action Work Plan shall provide for construction and implementation of the remedy and achievement of the Performance Standards in accordance with the ROD and the SOW.

d. With regard to the Initial Captain's Cove Work, if EPA notifies Respondents in writing that it requires Respondents to perform some portion of the Initial Captain's Cove Work, Respondents shall award a contract for such Work within ten (10) days after EPA's approval of the Supervising Contractor for such Work. Within thirty (30) days of the award of the Remedial Action contract, Respondents shall submit to EPA and NYSDEC a Remedial Action Work Plan for the performance of said portion of the Remedial Action. The Remedial Action Work Plan shall provide for construction and implementation of the remedy and achievement of the Performance Standards in accordance with the ROD and the SOW.

e. If, in lieu of performing the transportation and disposal of the radionuclide-contaminated materials from the Captain's Cove Property to an off-site disposal location, Respondents would prefer to pay EPA, in advance, all of the money that EPA would need to conduct that task itself, Respondents shall so notify EPA in writing within 21 days of the effective date of this Order, and Respondents shall thereafter proceed as directed by EPA. This shall not affect Respondents' obligations hereunder with regard to any other work required by this Order.

f. Respondents may submit one or two Remedial Action Work Plan(s), instead of the three referred to in subparagraphs b. through d. of this Paragraph, as long as the submission deadlines set forth in subparagraphs b. through d. are met and provided that all the required work is covered in the Plan(s). Whether Respondents submit one or more Remedial Action Work Plan(s), upon approval of each such Plan by EPA, the Plan shall be incorporated into and become enforceable under this Order.

g. The Remedial Action Work Plan(s) shall include any request for modification of the approved Final Remedial Design Report, if applicable. The Remedial Action Work Plan(s) shall also include a Remedial Action Schedule, a Site Management Plan, and a Remedial Waste Management Plan. These submittals shall, at a minimum, include the following: (1) the schedule for completion of the Remedial Action; (2) methodology for implementation of the Construction Quality Assurance Plan; (3) methods for satisfying any permitting requirements; (4) discussion of the methods by which construction operations shall proceed; (5) procedures and plans for the decontamination of equipment and the disposal of contaminated materials; and (6) discussion of quality control. The requirements of these plans and schedules are detailed in the SOW.



h. Upon EPA's written approval of the Remedial Action Work Plan(s), after a reasonable opportunity for review and comment by the State, Respondents shall implement the activities required under the Remedial Action Work Plan(s) in accordance with the approved schedules contained in the Final Design Report and Remedial Action Work Plan(s). Respondents shall submit to EPA and NYSDEC all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan(s) in accordance with the approved schedule for review and approval pursuant to Section XIII. Unless otherwise directed by EPA, Respondents shall not commence physical on-site activities at the Site prior to approval of the Remedial Action Work Plan(s).

30. Respondents shall continue to implement the Remedial Action until the Performance Standards are achieved and for so long thereafter as is otherwise required under this Order. Achievement of the Performance Standards shall be demonstrated in accordance with this Order, the ROD, and the SOW.

31. Pre-Final and Final Inspection, Certification of Completion.

a. Within fourteen (14) days after Respondents conclude that the Remedial Action has been fully performed (other than the Long-term Groundwater Monitoring), Respondents shall contact EPA and schedule and conduct a pre-final/final inspection to be attended by Respondents, EPA, and the State. If, after completion of the pre-final/final inspection, EPA determines that the Remedial Action or any portion thereof has not been completed in accordance with this Order or that the Performance Standards have not been achieved, EPA will notify Respondents in writing of the activities that must be undertaken to complete the Remedial Action and achieve the Performance Standards. EPA may set forth in the notice a schedule for performance of such activities or require Respondents to submit such a schedule to EPA for approval. Respondents shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph. Within fourteen (14) days after completion of any such required activities, Respondents shall schedule and conduct follow-up inspections, as necessary, to be attended by Respondents, EPA, and the State, until no further activities are required and the inspection is deemed in writing to be final by EPA.

b. The final inspection shall be followed by a written report (Draft Remedial Action Report) submitted within thirty (30) days of the final inspection by a qualified professional engineer, licensed by the State, and Respondents' Project Coordinator certifying that the Remedial Action has been completed in full satisfaction of the requirements of this Order

and in accordance with the SOW. The Draft Remedial Action Report shall include the following certification signed by a corporate official of a Respondent or the Project Coordinator:

"I certify under penalty of law that this document and all attachments were prepared under my direct supervision or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

c. Respondents shall perform long-term groundwater monitoring as set forth in the SOW. Within ninety (90) days of the completion of long-term groundwater monitoring, Respondents shall submit to EPA a written report describing the results of the long-term groundwater monitoring program. The report shall include the certification statement as set forth in subparagraph b., above, of this Paragraph by a responsible corporate official of one or more of the Respondents. EPA will either approve the report, or require modification of it in accordance with the procedures set forth in Section XIII of this Order.

d. If EPA concludes, following the initial or any subsequent report requesting approval of completion of the Remedial Action, that such Work has been fully performed in accordance with this Order and that the Performance Standards have been achieved, EPA will notify Respondents that the Remedial Action has been fully performed. Such notification shall not affect Respondents' obligations under this Order. Nothing in this Paragraph shall be construed to limit EPA's right to perform periodic reviews pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the discretion of EPA is appropriate at the Site, in accordance with Sections 104, 106, or 107 of CERCLA, 42 U.S.C. §§ 9604, 9606, or 9607.

#### IX. FAILURE TO ATTAIN PERFORMANCE STANDARDS

32. In the event that EPA determines that additional response activities are necessary to meet applicable Performance Standards, EPA may notify Respondents that additional response actions are necessary.

33. Unless otherwise stated by EPA, within thirty (30) days of receipt of notice from EPA that additional response activities are necessary to meet any applicable Performance Standards, Respondents shall submit for approval by EPA a work plan for the additional response activities. The plan shall conform to the applicable requirements of Sections VIII, XV, and XVI of this Order. Upon EPA's approval of the work plan pursuant to Section XIII below, Respondents shall implement the plan for additional response activities in accordance with the provisions and schedule contained therein.

#### X. EPA PERIODIC REVIEW

34. Under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, EPA may review the Site to assure that the Work performed pursuant to this Order adequately protects human health and the environment. Until such time as EPA certifies completion of the Work, Respondents shall conduct the requisite studies, investigations, or other response actions as determined necessary by EPA in order to permit EPA to conduct the review under Section 121(c) of CERCLA. As a result of any review performed under this Paragraph, Respondents may be required to perform additional Work or to modify Work previously performed.

#### XI. ADDITIONAL RESPONSE ACTIONS

35. EPA may determine that in addition to the Work identified in this Order and attachments to this Order, additional response activities may be necessary to protect human health and the environment. If EPA determines that additional response activities are necessary, EPA may require Respondents to submit a work plan for additional response activities. EPA also may require Respondents to modify any plan, design, or other deliverable required by this Order, including any approved modifications.

36. Not later than thirty (30) days after receiving EPA's notice that additional response activities are required pursuant to this Section, Respondents shall submit a work plan for the response activities to EPA for review and approval in accordance with Section XIII below. Upon approval by EPA, the work plan shall be deemed incorporated into this Order as a requirement of this Order and shall be an enforceable part of this Order. Upon approval of the work plan by EPA, Respondents shall implement the work plan according to the standards, specifications, and schedule in the approved work plan. Respondents shall notify EPA of their intent to perform such additional response activities within seven (7) days after receipt of EPA's request for additional response activities.

XII. ENDANGERMENT AND EMERGENCY RESPONSE

37. In the event of any action or occurrence during the performance of the Work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify the Remedial Project Manager ("RPM") or, if the RPM is unavailable, the Chief of the New York Remediation Branch of the Emergency and Remedial Response Division of EPA Region II. Respondents shall take such action in consultation with the RPM and in accordance with all applicable provisions of this Order, including the Health and Safety Plan.

38. Nothing in the preceding Paragraph shall be deemed to limit any authority of the United States to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

XIII. EPA REVIEW OF SUBMISSIONS

39. After review of any deliverable, plan, report or other item which is required to be submitted for review and approval pursuant to this Order, EPA may (a) approve the submission, (b) approve the submission with modifications, (c) disapprove the submission and direct Respondents to re-submit the document after incorporating EPA's comments, or (d) disapprove the submission and assume responsibility for performing all or any part of the response action. As used in this Order, the terms "approval by EPA," "EPA approval," or a similar term shall mean the action described in subparagraphs (a) or (b) of this Paragraph.

40. In the event of approval or approval with modifications by EPA, Respondents shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA.

41. Upon receipt of a notice of disapproval or a request for a modification, Respondents shall, within twenty-one (21) days, correct the deficiencies and resubmit the plan, report, or other item for approval. Notwithstanding the notice of disapproval, or approval with modifications, Respondents shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission.

42. If upon the first resubmission or upon any subsequent resubmission, the plan, report or other item is disapproved by EPA, Respondents shall be deemed to be out of compliance with

this Order. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require that Respondents correct the deficiencies, in accordance with the preceding Paragraphs of this Section. In addition, or in the alternative, EPA retains the right to amend or develop the plan, report or other item.

43. All plans, reports, and other submittals required to be submitted to EPA under this Order shall, upon approval by EPA, be deemed to be incorporated in and an enforceable part of this Order. In the event EPA approves a portion of a plan, report, or other item required to be submitted to EPA under this Order, the approved portion shall be deemed to be incorporated in and an enforceable part of this Order.

#### XIV. REPORTING REQUIREMENTS

44. a. In addition to any other requirement of this Order, Respondents shall prepare and provide to EPA written monthly progress reports which: (1) describe the actions which have been taken toward achieving compliance with this Order during the previous month; (2) include all results of sampling and tests and all other data received by Respondents during the previous month in the implementation of the Work; (3) describe all actions, data and plans which are projected to be commenced or completed during the next month and provide other information relating to the progress of the Work; (4) include information regarding percentage of completion, all delays encountered or anticipated that may affect the future schedule for completion of the RD, and a description of all efforts made to mitigate those delays or anticipated delays. These reports are to be submitted to EPA by the fifteenth day of every month following the effective date of this Order.

b. Upon the occurrence of any event during performance of the Work which, pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, requires reporting to the National Response Center, Respondents shall, within twenty-four (24) hours, orally notify the EPA RPM, or, in the event of the unavailability of the EPA RPM, the Chief of the New York Remediation Branch of the Emergency and Remedial Response Division, EPA Region II, in addition to the reporting required by CERCLA Section 103. Within twenty (20) days of the onset of such an event, Respondents shall furnish EPA with a written report setting forth the events which occurred and the measures taken, and to be taken, in response thereto.

c. All reports and other documents submitted by Respondents to EPA (other than the monthly progress reports

discussed above) which purport to document Respondents' compliance with the terms of this Order shall be signed by a responsible official of one or more of the Respondents.

d. On request of EPA and subject to any claims of applicable privilege(s), Respondents shall submit to EPA all documents in their possession, custody, or control relating to Respondents' performance of the Work required by this Order.

XV. QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS

45. Respondents shall complete and submit any QA/QC plan(s) in accordance with the EPA publication "Test Methods for Evaluating Solid Wastes" ("SW-846") (3rd Ed.), the "Region II CERCLA Quality Assurance Manual" (October 1989), and the EPA documents entitled "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operation" (EPA QA/R5) and "Preparing Perfect Project Plans" (EPA/600/9-88/087), or any revised versions thereof.

46. Respondents shall use QA/QC procedures in accordance with the QA/QC Plan(s) submitted and approved by EPA pursuant to this Order, and shall use standard EPA Chain of Custody procedures, as set forth in the National Enforcement Investigations Center Policies and Procedures Manual (November 1984), the National Enforcement Investigations Center Manual for the Evidence Audit (September 1981), and Section 1.3 of SW-846, or any amended versions thereof, while conducting all sample collection and analysis activities required herein by any plan. To provide quality assurance and maintain quality control, Respondents shall:

a. Ensure that all contracts with laboratories used by Respondents for the analysis of samples taken pursuant to this Order provide for access of EPA personnel and EPA-authorized representatives to assure the accuracy of laboratory results related to the Site;

b. Ensure that the laboratories utilized by Respondents for the analysis of samples taken pursuant to this Order perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis" (Revision No. 11, 1992) and the "Contract Lab Program Statement of Work for Organic Analysis" (Revision 9, 1994), and any amendments thereto (including amendments made during the course of the implementation of this Order);

- c. Ensure that all laboratories used by Respondents for analysis of samples taken pursuant to this Order participate in an EPA or EPA-equivalent QA/QC program; and
- d. Ensure that the laboratories used by Respondents for the analysis of samples taken pursuant to this Order analyze samples that EPA may submit to those laboratories for purposes of insuring that the laboratories meet EPA-approved QA/QC requirements.

47. Respondents shall notify EPA not less than fourteen (14) days in advance of any sample collection activity. At the request of EPA, Respondents shall allow split or duplicate samples to be taken by EPA or its authorized representatives of any samples collected by Respondents with regard to the Site or pursuant to the implementation of this Order. In addition, EPA shall have the right to take any additional samples that EPA deems necessary.

#### XVI. COMPLIANCE WITH APPLICABLE LAWS

48. All activities undertaken by Respondents pursuant to this Order shall be performed in accordance with the requirements of all applicable federal and State laws and regulations. EPA has determined that the activities contemplated by this Order are consistent with the NCP.

49. Except as provided in Section 121(e) of CERCLA and the NCP, no permit shall be required for any portion of the Work conducted entirely on-Site. Where any portion of the Work requires a federal, State, or local permit or approval, Respondents shall submit timely applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

50. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal, State, or local statute or regulation.

51. a. Any off-Site transfer, treatment, storage, or disposal of Waste Material by Respondents must be in compliance with the applicable requirements of RCRA, 42 U.S.C. §§ 6901-6991, Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), the Toxic Substances Control Act, 15 U.S.C. § 2601, et seq., as well as their implementing regulations, and all other applicable laws, including, but not limited to, 40 C.F.R. Parts 262 and 263 and 6 NYCRR Part 372. Furthermore, Respondents shall provide notice to EPA of any facilities that Respondents propose to use for such off-Site transfer, storage, treatment, or disposal at least seven (7) business days prior to the commencement of any such use, and

shall include the proposed facility's EPA RCRA ID # and the anticipated method of treatment or disposal. Respondents shall also obtain approval by EPA's RPM in advance of the use of such facilities. Any and all off-Site disposal activities conducted by Respondents under this Order shall be performed in conformance with the NCP (including Section 300.440 of the NCP, 40 C.F.R. § 300.440) and any amendments thereto.

b. If Waste Material from the Site is to be shipped to a waste management facility outside of New York State, Respondents shall provide prior written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state (with a copy to the EPA RPM). However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards. Respondents shall include in the written notification the following information: (i) the name and location of the facility to which the Waste Material is to be shipped; (ii) the type and quantity of the Waste Material to be shipped; (iii) the expected schedule for the shipment of the Waste Material; and (iv) the method of transportation. Respondents shall provide such notification to the receiving facility's state and to EPA in writing as soon as practicable, but in any event at least ten (10) business days prior to the said shipments. Respondents shall notify the receiving facility's state of major changes in their shipment plan, such as a decision to ship the Waste Material to another facility within the same state.

XVII. RPM, PROJECT COORDINATOR, NOTIFICATION

52. EPA has designated the following individual as its RPM at the Site:

Edward Als  
New York Remediation Branch  
Emergency and Remedial Response Division  
U.S. Environmental Protection Agency  
Region II  
290 Broadway  
New York, NY 10007-1866  
(212) 637-4272

53. If EPA changes its RPM, EPA will inform Respondents in writing of the name, address, and telephone number of the new RPM. The RPM shall have the authority lawfully vested in an RPM and On-Scene Coordinator by the NCP. The RPM shall have authority, consistent with the NCP, to halt any work required by this Order and to take any necessary response action.



54. Within ten (10) days after the effective date of this Order, Respondents shall designate a Project Coordinator and shall submit the name, address, telephone number, qualifications and job title of the Project Coordinator to EPA for review and approval. Respondents' Project Coordinator shall be responsible for overseeing Respondents' implementation of this Order. If Respondents wish to change their project Coordinator, Respondents shall provide written notice to EPA, five (5) days prior to changing the Project Coordinator, of the name and qualifications of the new Project Coordinator. Respondents' selection of a Project Coordinator shall be subject to EPA approval.

55. All plans, reports, notices and other documents required to be submitted to EPA under this Order shall be directed to the following individuals at the addresses specified below:

As to EPA:

2 copies (or 5 copies if such communication is a plan or report):

Chief, New York Remediation Branch  
Emergency and Remedial Response Division  
U.S. Environmental Protection Agency  
Region II  
290 Broadway  
New York, NY 10007-1866  
Attention: Li Tungsten Superfund Site Remedial  
Project Manager

All required written communications other than work plans, design documents, and technical reports shall also be sent to the following:

1 copy: Chief, New York/Caribbean Superfund Branch  
Office of Regional Counsel  
U.S. Environmental Protection Agency, Region II  
290 Broadway  
New York, NY 10007-1866  
Attention: Li Tungsten Superfund Site Attorney

In addition, when submitting any written communication required hereunder to EPA, Respondents shall simultaneously submit 2 copies (or 7 copies if such communication is a plan or report) of that communication to the State at the following address:

Michael J. O'Toole, Jr.  
Director, Division of Environmental Remediation  
N.Y.S. Department of Environmental Conservation  
50 Wolf Road  
Albany, New York 12233-7010  
Attention: Li Tungsten Site Engineer

XVIII. OVERSIGHT

56. During the implementation of the requirements of this Order, Respondents and their contractors and subcontractors shall be available for such conferences and inspections with EPA as EPA may determine are necessary for EPA to adequately oversee the Work being carried out and/or to be carried out.

57. Respondents and their employees, agents, contractors, representatives and consultants shall cooperate with EPA in its efforts to oversee Respondents' implementation of this Order.

XIX. COMMUNITY RELATIONS

58. Respondents shall cooperate with EPA in providing information regarding the Site or the Work to the public. As requested by EPA, Respondents shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

XX. SITE ACCESS, INSTITUTIONAL CONTROLS,  
AND DATA/DOCUMENT AVAILABILITY

59. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Order, is owned or controlled by a Respondent, said Respondent shall:

a. commencing on the effective date of this Order, provide EPA, NYSDEC, and their representatives, including their contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Order, including the following activities:

- i. Monitoring the Work;
- ii. Verifying any data or information submitted to EPA;
- iii. Conducting investigations relating to contamination at or near the Site;

- iv. Obtaining samples;
- v. Assessing the need for, planning, or implementing additional response actions at or near the Site;
- vi. Implementing any Work pursuant to Paragraph 74 of this Order;
- vii. Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Respondents or their agents, consistent with Section XXI (Record Preservation);
- viii. Assessing Respondents' compliance with this Order; and
- ix. Determining whether the Site or other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Order;

b. commencing on the effective date of this Order, refrain from using the Site, or such other property, in any manner that would interfere with or adversely affect the integrity or protectiveness of the remedial measures to be implemented pursuant to this Order. Such restrictions include, but are not limited to, not permitting the Site to be used for residential purposes, and not allowing the use of groundwater at the Site for potable purposes until the groundwater has been restored to the target cleanup levels as provided in the ROD; and

c. if EPA so requests, execute and record in the Recorder's Office or Registry of Deeds or other appropriate land records office of Nassau County, State of New York, an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Order, including, but not limited to, those activities listed in subparagraph a. of this Paragraph, and (ii) grants the right to enforce any land/water use restrictions mandated under subparagraph b. of this Paragraph, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Order. Such Respondent(s) shall grant the access rights and the rights to enforce the land/water use restrictions to one or more of the following persons, as determined by EPA: (i) EPA and its representatives, (ii) the State and its representatives, (iii) the other Respondents, and their respective representatives, and/or (iv) other appropriate grantees. Such Respondent(s) shall, within forty-five (45) days

of EPA's request, submit to EPA for review and approval with respect to such property:

i. A draft easement that is enforceable under the laws of the State of New York, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. § 255; and

ii. a current title commitment or report prepared in accordance with the U.S. Department of Justice Standards for the Preparation of Title Evidence in Land Acquisitions by the United States (1970) (the "Standards").

Within fifteen (15) days of EPA's approval and acceptance of the easement, such Respondent(s) shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, record the easement with the Recorder's Office or Registry of Deeds or other appropriate office of Nassau County. Within thirty (30) days of recording the easement, such Respondent(s) shall provide EPA with final title evidence acceptable under the Standards, and a certified copy of the original recorded easement showing the clerk's recording stamps.

60. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Order, is owned or controlled by persons other than any Respondent, Respondents shall use best efforts to secure from such persons:

a. an agreement to provide access thereto for Respondents, EPA, the State, as well as their respective representatives (including contractors), for the purpose of conducting any activity related to this Order, including those activities listed in Paragraph 59.a. of this Order;

b. an agreement, enforceable by Respondents and EPA, to abide by the obligations and restrictions established by Paragraph 59.b. of this Order, or that are otherwise necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Order; and

c. If EPA so requests, the execution and recordation in the Recorder's Office or Registry of Deeds or other appropriate land records office of Nassau County, State of New York, of an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Order, including those activities listed in Paragraph 59.a. of

this Order, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraph 59.b. of this Order, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Order. The access rights and/or rights to enforce land/water use restrictions shall be granted to one or more of the following persons, as determined by EPA: (i) EPA and its representatives, (ii) the State and its representatives, (iii) Respondents and their representatives, and/or (iv) other appropriate grantees. Within forty-five (45) days of the request by EPA, Respondents shall submit to EPA for review and approval with respect to such property:

i. A draft easement that is enforceable under the laws of the State of New York, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. § 255; and

ii. a current title commitment or report prepared in accordance with the Standards.

d. Within fifteen (15) days of EPA's approval and acceptance of the easement, Respondents shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, the easement shall be recorded with the Recorder's Office or Registry of Deeds or other appropriate office of Nassau County. Within thirty (30) days of the recording of the easement, Respondents shall provide EPA with final title evidence acceptable under the Standards, and a certified copy of the original recorded easement showing the clerk's recording stamps.

e. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access, access easements, land/water use restrictions, and/or restrictive easements. If any access or land/water use restriction agreements required by subparagraphs a. or b. of this Paragraph are not obtained within forty-five (45) days of the effective date of this Order, or any access easements or restrictive easements required by subparagraph c. of this Paragraph are not submitted to EPA in draft form within forty-five (45) days of the date of EPA's request therefor, Respondents shall promptly notify EPA in writing, and shall include in that notification a summary of the steps that Respondents have taken to attempt to comply with this Paragraph. EPA may, as it deems appropriate, assist Respondents in obtaining

access or land/water use restrictions, either in the form of contractual agreements or in the form of easements running with the land.

f. If EPA determines that land and/or water use restrictions in the form of state or local laws, regulations or ordinances are needed to implement the remedy selected in the ROD, ensure the overall integrity and protectiveness thereof, or ensure non-interference therewith, Respondents shall cooperate with EPA's efforts to secure such governmental controls.

61. All data, records, photographs and other information created, maintained or received by Respondents or their agents, contractors or consultants in connection with implementation of the Work under this Order, including but not limited to contractual documents, quality assurance memoranda, raw data, field notes, laboratory analytical reports, invoices, receipts, work orders and disposal records, shall, without delay, be made available to EPA on request. EPA shall be permitted to copy all such documents and other items.

62. Upon request by EPA or its designated representatives, Respondents shall provide EPA or its designated representatives with duplicate and/or split samples of any material sampled in connection with the implementation of this Order, or allow EPA or its designated representatives to take such duplicate or split samples.

63. Notwithstanding any provision of this Order, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulation.

64. Respondents may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this Order under 40 C.F.R. § 2.203, provided such claim is not inconsistent with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), or other provisions of law. This claim shall be asserted in the manner described by 40 C.F.R. § 2.203(b) and substantiated by Respondents at the time the claim is made. Information determined to be confidential by EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA or the State without further notice to the Respondents. Respondents shall not assert confidentiality claims with respect to any data related to Site conditions, sampling, or monitoring.

65. Respondents shall maintain for the period during which this Order is in effect an index of documents that Respondents claim contain confidential business information. The index shall contain, for each document, the date, author, addressee, and subject of the document. Upon written request from EPA, Respondents shall submit a copy of the index to EPA.

#### XXI. RECORD PRESERVATION

66. Respondents shall provide to EPA, upon request, copies of all documents and information within their possession and/or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Order, including records pertaining to sampling, analysis, or chain of custody procedures manifests, trucking logs, receipts, reports, correspondence, or other documents or information related to the Work.

67. Until ten (10) years after completion of the Work, Respondents shall preserve and retain all records and documents in their possession or control, including the documents in the possession or control of their contractors and agents that relate in any manner and to the performance of the Work. At the conclusion of this document retention period, Respondents shall notify EPA at least ninety (90) calendar days prior to the destruction of any such records or documents, and upon request by EPA, Respondents shall deliver any such records or documents to EPA.

#### XXII. DELAY IN PERFORMANCE

68. Any delay in performance of this Order that, in EPA's judgment, is not properly justified by Respondents under the terms of this Section shall be considered a violation of this Order. Any delay in performance of this Order shall not affect Respondents' obligations to perform all obligations fully under the terms and conditions of this Order.

69. Respondents shall notify EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to EPA's RPM within forty-eight (48) hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within seven (7) days after notifying EPA by telephone, Respondents shall provide written notification fully describing the nature of the delay, any justification for the delay, any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Order, the

measures planned and taken to minimize the delay, and a schedule for implementing the measures that have been or will be taken to mitigate the effect of the delay. Increased costs or expenses associated with implementation of the activities called for in this Order is not a justification for any delay in performance.

#### XXIII. FINANCIAL ASSURANCE AND INSURANCE

70. Respondents shall demonstrate their ability to complete the Work required by this Order and to pay all claims that arise from the performance of the Work by obtaining and presenting to EPA within thirty (30) days of the effective date of this Order one of the following; (1) a performance bond; (2) a letter of credit; (3) a guarantee by a third party; or (4) internal financial information to allow EPA to determine that Respondents have sufficient assets available to perform the Work. If EPA determines that such financial information is inadequate, Respondents shall, within thirty (30) days after receipt of EPA's notice of determination, obtain and present to EPA for approval one of the other three forms of financial assurance listed above.

71. At least seven (7) days prior to commencing any Work at the Site pursuant to this Order, Respondents shall submit to EPA a certification that Respondents or their contractors and subcontractors have adequate insurance coverage or have indemnification for liabilities for injuries or damages to persons or property which may result from the activities to be conducted by or on behalf of Respondents pursuant to this Order. Respondents shall ensure that such insurance or indemnification is maintained for the duration of the Work required by this Order.

#### XXIV. EPA NOT LIABLE

72. EPA, by issuance of this Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order. EPA may not be deemed to be a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order.



XXV. ENFORCEMENT AND RESERVATIONS

73. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States in connection with the Site. This reservation shall include, but not be limited to past costs, future costs, direct costs, indirect costs, the costs of oversight, as well as accrued interest as provided in Section 107(a) of CERCLA.
74. Notwithstanding any other provision of this Order, at any time during the remedial design and remedial action ("RD/RA"), EPA may perform its own RD/RA, complete the RD/RA (or any portion of the RD/RA) as provided in CERCLA and the NCP, and seek reimbursement from Respondents for its costs, or seek any other appropriate relief.
75. Nothing in this Order shall preclude EPA from taking any additional enforcement actions, including modification of this Order or issuance of additional orders, and/or additional remedial or removal actions as EPA may deem necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law.
76. Notwithstanding any provision of this Order, EPA hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA, and any other applicable statute or regulation.
77. Respondents shall be subject to civil penalties under Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than \$27,500 for each day in which Respondents willfully violate, or fail or refuse to comply with this Order without sufficient cause. In addition, failure to properly provide response action under this Order, or any portion hereof, without sufficient cause, may result in liability under Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount at least equal to, and not more than three times, the amount of any costs incurred by EPA as a result of such failure to take proper action.
78. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action, or demand in law or equity against any person for any liability it may have arising out of or relating in any way to the Site.
79. If a court issues an order that invalidates any provision of this Order or finds that any one or more of the Respondents have sufficient cause not to comply with one or more provisions of

this Order, Respondents, or the remaining Respondents, as the case may be, shall remain bound to comply with all provisions of this Order not invalidated by the court.

XXVI. EFFECTIVE DATE AND COMPUTATION OF TIME

80. This Order shall be effective fourteen (14) days after receipt by Respondents, unless a conference is timely requested pursuant to Paragraph 81, below. If such conference is timely requested, this Order shall become effective three (3) days following the date the conference is held, unless the effective date is modified by EPA. All times for performance of ordered activities shall be calculated from this effective date.

XXVII. OPPORTUNITY TO CONFER

81. Respondents may, within ten (10) days after receipt of this Order, request a conference with EPA to discuss this Order. If requested, the conference shall occur within seven (7) days of Respondents' request for a conference.

82. The purpose and scope of the conference shall be limited to issues involving the implementation of the Work required by this Order and the extent to which Respondents intend to comply with this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondents a right to seek review of this Order, or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any conference held pursuant to any Respondent's request, Respondents may appear in person or by an attorney or other representative.

83. Requests for a conference must be by telephone to James Doyle, Assistant Regional Counsel, Office of Regional Counsel, EPA Region II, telephone (212) 637-3165, followed by written confirmation mailed that day to Mr. Doyle and the RPM at the addresses set forth in Section XVII (RPM, Project Coordinator, Notification) of this Order.

XXVIII. TERMINATION AND SATISFACTION

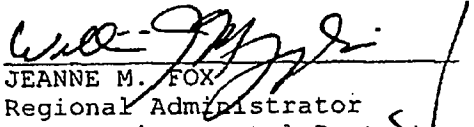
84. This Order will be terminated by EPA if Respondents demonstrate in writing and certify to the satisfaction of EPA that all Work and activities required under this Order, including any additional work required by EPA, have been performed fully in accordance with this Order and EPA has approved the certification in writing. Such an approval by EPA, however, shall not relieve Respondents of any remaining obligations under this Order, including those requirements set forth in Section XXI (Record

Preservation) regarding record preservation. Respondents' written submission under this Paragraph shall include a sworn statement by a responsible official of Respondents which states the following:

"After thorough investigation, I certify that the information contained in or accompanying this certification is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

For purposes of this Order, a responsible official is a corporate official who is in charge of a principal business function.

U.S. ENVIRONMENTAL PROTECTION AGENCY

  
JEANNE M. FOX  
Regional Administrator  
U.S. Environmental Protection Agency  
Region II

9/29/00  
Date of Issuance

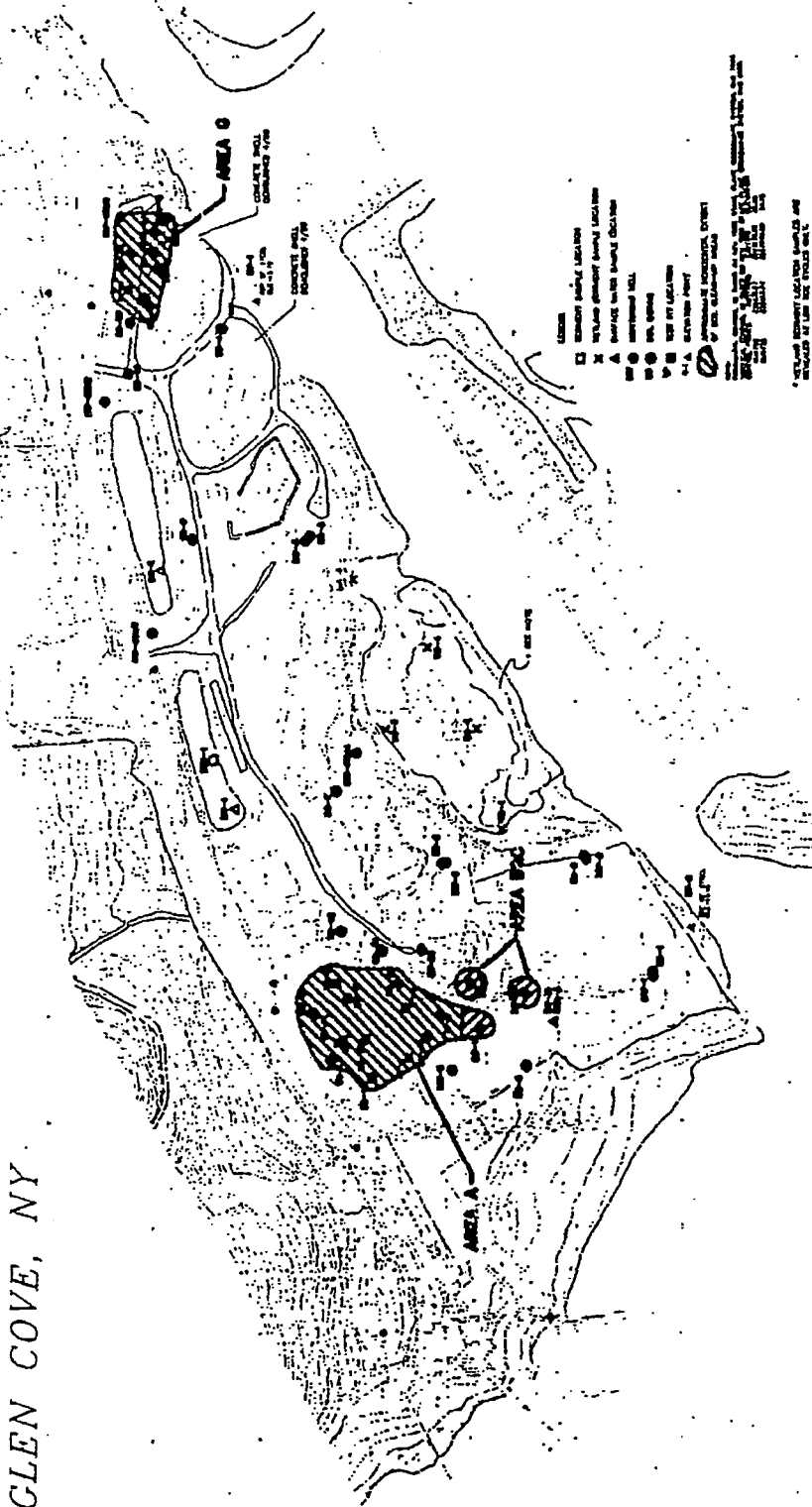
**ATTACHMENT 1**



**ATTACHMENT 2**

Cross-hatched Areas = Above Cleanup Criteria

# CARVIE'S POINT GLEN COVE, NY



	<p>U TUNGSTEN FEASIBILITY STUDY GLEN COVE, NEW YORK USEPA REGION II ARCS CONTRACT NO. 68-99-0051; W.A. NO. 025-2.4L</p>	<p>Captain's Cove Property SOIL ABOVE CLEANUP CRITERIA</p>		<p>DATE: 10/1/88 BY: [Signature]</p>
		<p>DATE: 10/1/88 BY: [Signature]</p>		<p>DATE: 10/1/88 BY: [Signature]</p>

**ATTACHMENT 3**



## **DECLARATION FOR THE RECORD OF DECISION**

### **SITE NAME AND LOCATION**

Li Tungsten Corporation Superfund Site

City of Glen Cove

Nassau County, New York

### **STATEMENT OF BASIS AND PURPOSE**

This decision document presents the selected remedial action for the Li Tungsten Corporation Site, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision document explains the factual and legal basis for selecting the remedy for this Site.

The New York State Department of Environmental Conservation (NYSDEC) concurs with the selected remedy. A letter of concurrence from the NYSDEC is attached to this document (**Appendix IV**).

The information supporting this remedial action decision is contained in the administrative record for this Site. The index for the administrative record is attached to this document (**Appendix III**).

### **ASSESSMENT OF THE SITE**

Actual or threatened releases of hazardous substances from the Li Tungsten Corporation Site, if not addressed by implementing the response actions selected in this Record of Decision, may present an imminent and substantial endangerment to the public health or welfare, or to the environment.

### **DESCRIPTION OF THE SELECTED REMEDY**

The remedial action described in this document addresses contaminated soil and groundwater at the Li Tungsten Corporation Site. The Site includes both the Li Tungsten facility (designated operable unit 1) as well as those portions of the Captain's Cove property (designated operable unit 2) on which radioactive ore residuals were deposited.

### **Selected Soil Remedy**

The major components of the selected soil remedy include:

- Excavation of soils and sediments contaminated above cleanup levels;
- Separation of radionuclide-contaminated soil from non-radionuclide soil contaminated with heavy metals;
- Off-Site disposal of both radionuclide and metals-contaminated soil at appropriately licensed facilities;
- Off-Site disposal of radioactive waste located in the Dickson Warehouse at an appropriately licensed facility;
- Building demolition at the Li Tungsten facility;
- Storm sewer and sump cleanouts at the Li Tungsten facility;
- Institutional controls governing the future use of the Site;
- Decommissioning of Industrial Well N1917 on Parcel A; and
- Collection and off-site disposal of contaminated surface water from Parcels B and C.

In the event that separation of radionuclide-contaminated soil from nonradionuclide soil contaminated with heavy metals cannot be accomplished in a cost-effective manner, the excavated soils will be disposed at appropriately licensed facilities as described in Alternatives LS-2 and CS-2 in the Decision Summary of this Record of Decision.

The Remedial Action Objectives for soil are to prevent or minimize exposure to contaminants of concern through inhalation, direct contact or ingestion, and to prevent or minimize cross-media impacts from contaminants of concern in soil/sediments to underlying groundwater.

### **Selected Groundwater Remedy**

The selected groundwater remedy includes no action, other than a long-term groundwater monitoring program, to assess the recovery of the Upper Glacial Aquifer after the soil remedy is implemented.

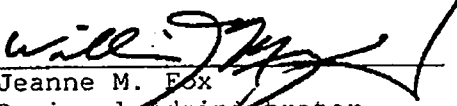
The Remedial Action Objectives for groundwater are to prevent or minimize ingestion, dermal contact and inhalation of metals-contaminated groundwater on lower Parcel C and on Parcel A that is above State and Federal MCLs, as well as to restore groundwater quality to levels which meet State and Federal standards. The metals-contaminated groundwater in the Upper Glacial Aquifer can be characterized as generally low-level and sporadic in nature. EPA believes that attainment of State and Federal standards for contaminated groundwater will be hastened by the soil cleanup that is part of the selected remedy. EPA also believes that the

objectives related to minimizing exposure to contaminated groundwater are presently satisfied, and will remain so in the future use commercial development scenario.

**DECLARATION OF STATUTORY DETERMINATIONS**

The selected remedy meets the requirements for remedial actions set forth in CERCLA §121, 42 U.S.C. §9621. It is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume of contaminants as their principal element.

Because this remedy will result in hazardous substances remaining on the Site above health-based levels, a review will be conducted within five years after commencement of the remedial action, and every five years thereafter, to ensure that the remedy continues to provide adequate protection of human health and the environment.

  
Jeanne M. Fox  
Regional Administrator

  
Date

# RECORD OF DECISION

Li Tungsten Corporation Superfund Site

City of Glen Cove  
Nassau County, New York

United States Environmental Protection Agency  
Region II  
New York, New York  
September 1999

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**SITE NAME, LOCATION AND DESCRIPTION**

The Li Tungsten Corporation Site (Site) consists of two tracts of land - the real property comprising the former Li Tungsten facility (referred to below as the Li Tungsten facility) and portions of the real property comprising the former Captain's Cove condominium development and Garvies Point dump site (referred to below as the Captain's Cove property). The Li Tungsten facility is located at 63 Herhill Road in the City of Glen Cove, Nassau County, Long Island, New York. The Captain's Cove property is located approximately 0.5 mile to the west of the Li Tungsten facility on Garvies Point Road (see **FIGURE 1**).

The 26-acre Li Tungsten facility (see **FIGURE 2**) consists of four parcels designated by EPA as A, B, C, and C'. Parcel A is a seven-acre paved area abutting Glen Cove Creek which served as the main operations center when the facility was active. Historically, Parcel A contained the majority of the buildings and other structures (mostly aboveground tanks).

Parcel B is a six-acre tract north of Parcel A. Parcel B is undeveloped and contains a small pond, an intermittent stream, and a small wetland. Two separate areas on Parcel B, south of the pond and directly opposite the Benbow Building, were used as parking areas when the Li Tungsten facility was active. The northernmost portion of Parcel B was used as an employee picnic area. The area between the two parking areas was used for disposal of ore and other metals-processing residues. Directly north of Parcel B is residential housing along The Place, an historic street dating from Glen Cove's original settlement in the Seventeenth Century.

Parcel C, approximately ten acres in size, is north of Parcel A and west of Parcel B. The Dickson Warehouse and the Benbow Building, shown on **FIGURE 2**, are located on Parcel C. A 500,000-gallon aboveground fuel oil tank and two other storage tanks were removed from this parcel during an EPA removal action completed in 1998. In addition, three surface impoundments (one lined impoundment called "Mud Pond" and two unlined impoundments called "Mud Holes") were present on Parcel C during facility operations.

Parcel C' is approximately four acres and consists of undeveloped land adjacent to Parcel C. Parcel C' was not part of the facility during active operations; however, some limited disposal activity also took place on a small portion of this parcel. Residential housing on Janet Lane abuts Parcel C' to the north. For the purposes of the remediation of the Site, EPA is addressing Parcel C' as part of Parcel C.

The Captain's Cove property (see **FIGURE 3**) is a 23-acre parcel at the end of Garvies Point Road, approximately 0.5 mile west of the Li Tungsten facility. The property is bounded by Hempstead Harbor to the west, Garvies Point Preserve to the north (across Garvies Point Road), the Glen Cove Anglers' Club to the east, and Glen Cove Creek to the south. A four-acre wetland makes up a portion of the property's southern boundary with the Creek. The portions of the Captain's Cove property which are part of the Li Tungsten Site consist of two general areas where radioactive wastes were deposited. The remainder of the property has been investigated as a State Superfund site by the State of New York.

The Li Tungsten and Captain's Cove properties are located in a mostly commercial area along the north side of Glen Cove Creek. The immediate area includes light and heavy industry, commercial businesses, a sewage treatment plant, a Nassau County public works facility, and five State or Federal hazardous waste sites. The area, which was settled in the Seventeenth Century, has been industrialized since the mid-1800's. However, there are residences within 100 feet of the northern ends of Parcels B and C of the Li Tungsten property, along Janet Lane and The Place, and within 1,000 feet of Captain's Cove on McLoughlin Street. Other area land uses include marinas, yacht clubs, beaches, and the Garvies Point Preserve. The Li Tungsten property is presently zoned industrial, while Captain's Cove is zoned residential.

Also located on the north side of Glen Cove Creek are two other State Superfund sites; namely, Konica Imaging USA, Inc., (formerly the manufacturing facilities known as Powers Chemco and as Columbia Ribbon and Carbon Company), and Crown Dykman Laundry (now operated as a Volvo service facility), as well as one other Federal Superfund site, the Mattiace Petrochemical Site, which adjoins the Li Tungsten facility to the west. EPA's remedial efforts at the Mattiace Site have included a remedial investigation and feasibility study (RI/FS) which addressed Glen Cove Creek as a potential receptor of hazardous waste. Remedial action at the Mattiace Site involved removal and off-site disposal of chemical storage tanks and heavily contaminated soils; extraction and treatment of contaminated soil gases and groundwater at a newly constructed treatment facility; and monitoring of groundwater as well as Glen Cove Creek's sediments and water column for the duration of the estimated 30 years of the treatment facility operation.

A three-mile radius of the Site includes the City of Glen Cove, as well as a large portion of Long Island Sound, Sea Cliff, Brookville, Glen Head, Locust Valley, Sands Point, Port Washington, and Lattingtown. Notable features within this area are Garvies

Point Preserve, a community hospital, and several schools, country clubs, and municipal parks. Approximately 44,000 people are estimated to reside within this three-mile radius.

The City of Glen Cove has begun a revitalization effort involving over 200 acres surrounding Glen Cove Creek. The City's Glen Cove Creek Revitalization Plan was finalized in 1998. The Revitalization Plan projects that future use of the area will be commercial and may include a high-speed ferry to Manhattan and Connecticut, as well as boardwalks, museums, restaurants, shops, a hotel, and a conference center. To help implement the Revitalization Plan, the City is utilizing both State and Federal Brownfields funding to relocate several non-water-dependent businesses presently adjacent to the Creek to other areas of the City.

#### **SITE HISTORY AND ENFORCEMENT ACTIVITIES**

##### History

The processing of tungsten and other metals at the Li Tungsten facility began in 1942 and ended in 1985. The facility's operations consisted mainly of processing tungsten ore concentrates and scrap metal containing tungsten (collectively referred to below as tungsten material) into ammonium paratungstate (APT) and the formulating of APT into tungsten powder and tungsten carbide powder. Other products produced at the facility included tungsten carbide powder for plasma spraying, tungsten titanium carbide powder, tantalum carbide powder, tungsten spray powder, crystalline tungsten powder, and molybdenum spray powder. From 1945 to the early 1950's, the facility processed significant amounts of antimony (tin) ore concentrates into pure antimony.

A variety of extraction processes were used to separate the various accessory metals from the tungsten, depending upon the specific type of tungsten material being processed. Typical operations in the extraction process included physical, chemical, and mechanical processes such as sizing and crushing, gravity separation, magnetic and electrostatic separation, roasting, leaching, flotation, and fusion.

Numerous aboveground wooden, steel, and fiberglass tanks were used at the facility to perform these operations and to store reactants. As certain tungsten material moved through the various processing stages, accessory metals including radioactive isotopes of thorium, uranium, and radium, as well as other heavy metals, became more concentrated in the residue or slag. The other accessory metals which became concentrated in the tungsten material and were removed as impurities during the extraction process included arsenic,



barium, bismuth, copper, cobalt, chromium, lead, manganese, mercury, nickel, vanadium, and zinc.

Some radioactive ore residuals from the Li Tungsten facility were disposed of at the Captain's Cove property. In addition, radioactive ore residuals and other wastes from the processing of the tungsten material were deposited on Parcels B and C. Liquid wastes are believed to have been disposed of through numerous subsurface drainage pipes in the bulkhead which empty directly into Glen Cove Creek. State Pollutant Discharge Elimination System permits for the facility allowed for up to as many as 250,000 gallons per day of discharge to Glen Cove Creek. The two unlined Mud Holes on Parcel C were also reportedly used to dispose of liquid wastes.

On July 21, 1989, EPA signed an Administrative Order on Consent with the current owner of the Li Tungsten facility property, the Glen Cove Development Corporation (GCDC), for the performance of a removal action at the Li Tungsten facility. Activities performed by GCDC included addressing radioactive materials, removing drummed chemicals and laboratory reagents, addressing a mercury spill, and sampling, analyzing, and inventorying work. Work pursuant to the Order was completed in July 1990.

In 1995 and 1996, EPA performed response activities at the Li Tungsten facility in order to facilitate performance of EPA's RI. The interim measures included the consolidation and temporary relocation of ore materials to the Dickson Warehouse on Parcel C, as well as the removal of significant quantities of debris and vegetation. EPA completed its phased removal activities from October 1996 to October 1998, primarily to address the hazards associated with the remaining Li Tungsten tank wastes. The removal action resulted in the disposal of large volumes of waste liquid and sludge from the 271 process and storage tanks, as well as removal and disposal of asbestos and other hazardous chemicals found at the facility. EPA also demolished two structures on Parcel A, the Dice Complex and East Building, because of the danger posed by their structural instability and in order to facilitate access to tanks.

From the late 1950's to the late 1970's, Captain's Cove was used as a dump site for the disposal of incinerator ash, sewage sludge, rubbish, household debris, dredged sediments from Glen Cove Creek, and industrial wastes. The property was purchased by Village Green Realty at Garvies Point, Inc. in 1983 for a residential condominium development project. Development efforts were abandoned in the mid-1980's when the New York State Department of Environmental Conservation (NYSDEC), after determining that the property was contaminated with radionuclides and other hazardous wastes, designated it as a State Superfund site. The NYSDEC, which is not

authorized under State law to address radioactive wastes, requested that EPA address the radioactive contamination at the Captain's Cove property, while the NYSDEC addressed the chemical contamination under its own State program. EPA subsequently determined that the areas of Captain's Cove where radioactive wastes were located could be considered part of the Li Tungsten Site, after sampling showed that the radioactive residuals profile matched that at the Li Tungsten facility. The two primary areas of EPA concern, designated as Area A and Area G, constitute approximately two acres of the entire 23-acre Captain's Cove property, and the areas are located in the northwestern and eastern corners of the property, respectively.

Meanwhile, EPA developed a workplan for field investigation of the radioactive ore residuals at Captain's Cove in April 1997 as part of a focused feasibility study (FFS). Prior to this, the NYSDEC at EPA's request performed a gamma radiation survey of the entire property in 1996, in order to confirm the results obtained during a previous NYSDEC investigation. In March 1997, the NYSDEC entered into an Order with the City of Glen Cove, a former owner of the Captain's Cove property, to perform an RI/FS for the municipal waste portion of the fill, which is generally segregated from the radioactive ore residuals areas. The fieldwork was performed by the City concurrently with EPA's FFS fieldwork. The City completed a feasibility study and the NYSDEC issued a Record of Decision (ROD) in March 1999, calling for excavation of all materials and the off-Site disposal of any chemically hazardous waste and any materials greater than one inch in diameter.

#### Enforcement Activity

As noted above, EPA issued an Administrative Order on Consent to GCDC in 1989 to conduct a removal action at the Li Tungsten facility.

EPA sent Special Notice letters on February 12, 1992 to five potentially responsible parties (PRPs), namely, Teledyne, Inc.; Wah Chang Smelting and Refining Co. of America, Inc.; Li Tungsten, Inc.; Glen Cove Development Corp.; and John C. Li. These letters gave the PRPs 60 days (until April 14, 1992) to submit a good faith proposal to finance or undertake an RI/FS at the Li Tungsten facility. A conditional good faith proposal from Teledyne was received, but subsequent negotiations did not result in a settlement.

EPA then developed an RI/FS workplan and in March 1993 again requested that the PRPs agree to perform the RI/FS and enter into an administrative order on consent with EPA. EPA did not receive any offers to perform the RI/FS. While performing the RI/FS, EPA

also continued to develop information as part of its search for additional PRPs, and it has identified and notified an additional 24 parties as PRPS since the original five notifications. EPA continues to investigate the potential Site liability of other parties.

#### HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI/FS and FFS reports and the Proposed Plan for the Site were released to the public for comment on July 28, 1999. These documents, as well as other documents in the administrative record (see Administrative Record Index, Appendix III) have been made available to the public at two information repositories maintained at the EPA Docket Room in Region II, New York and the Glen Cove Public Library, located at 4 Glen Cove Avenue, Glen Cove, New York. A public notice announcing the public meeting on the Proposed Plan as well as the availability of the above-referenced documents was published in Newsday on July 28, 1999. The public notice established a thirty-day comment period. EPA subsequently received requests for an extension of the public comment period and extended the comment period through September 17, 1999. The Agency's decision to extend the comment period was announced at the August 16, 1999 public meeting on the Proposed Plan, as well as publicized through mailings to more than 150 interested parties on the Site mailing list.

The public meeting was held at the Glen Cove City Hall, located at 9 Glen Street, Glen Cove, New York, to present the Proposed Plan to interested citizens and to address any questions concerning the Plan and other details related to the RI and FS reports. Responses to the comments and questions received at the public meeting, along with other written comments received during the public comment period, are included in the Responsiveness Summary (see Appendix V).

In the early 1990's, EPA entered into a cooperative agreement for Superfund pilot studies with Clean Sites, Inc. as a result of Clean Sites' January 1989 Report entitled "Making Superfund Work." EPA selected the remediation of the Li Tungsten site as a "pilot" for the application of some of its Superfund improvement concepts, most notably early stakeholder involvement and early identification of most realistic future use of a site. Clean Sites conducted interviews of State/local government officials, local organizations, potentially responsible parties, and interested members of the community, and developed a citizen's advisory group called the Li Tungsten Task Force, complete with a Charter of Rules and Procedures, in March 1994. Although Clean Sites' cooperative agreement expired in July 1996, the Task Force has continued to conduct monthly meetings with EPA without Clean Sites' involvement, usually on the first Thursday of each month. The Task Force also

applied for and received a technical assistance grant (TAG) from EPA in September 1995.

#### **SCOPE AND ROLE OF RESPONSE ACTION**

Site remediation activities are sometimes segregated into different phases, or operable units, so that remediation of different environmental media or areas of a site can proceed separately, resulting in an expeditious remediation of the entire site. EPA has designated two operable units for the Li Tungsten Site as follows:

Operable Unit 1 (OU 1) - the Li Tungsten Facility  
Operable Unit 2 (OU 2) - the Captain's Cove Property

The primary objective of the remedy selected in this ROD is to reduce contaminant levels in affected media, including soils, groundwater, and ponded water/sediments, to levels that are protective of human health and the environment.

The selected remedy will complement cleanup actions previously conducted under the removal program (described above) which have addressed the removal of radioactive materials, drummed chemicals, laboratory reagents, elemental mercury, asbestos, and disposal of large volumes of waste liquid and sludge from 271 process and storage tanks. EPA has also demolished two structures on Parcel A, the Dice Complex and East Building, because of the danger posed by their structural instability and in order to facilitate access for tank removal activity.

#### **SUMMARY OF SITE CHARACTERISTICS**

The purpose of the RI for the Li Tungsten facility and the FFS for the Captain's Cove property was to define the nature and extent of any contamination resulting from previous activities at the Site. The RI and FFS were performed by Malcolm Pirnie, Inc. for EPA between March 1993 and November 1998, and included sampling and analysis of surface and subsurface soils, ponded water, and wetlands sediments, storm sewers, and groundwater. The RI Report was issued in May 1998, while the FFS Report was issued concurrently with the FS report in July 1999.

Field work at the Site included the following activities:

- ☐ soil gas survey
- ☐ gamma radiation survey
- ☐ surface soil/ore residuals sampling

- ☐ soil borings for purposes of both sampling and gamma logging
- ☐ test pitting/sampling
- ☐ groundwater monitoring well installation/sampling
- ☐ groundwater elevation and aquifer characteristics measurements
- ☐ storm sewer/sediment sampling

See **FIGURE 3** for the locations of the above field work activities at the Li Tungsten facility.

To determine which media (soil, groundwater, air, etc.) contain contamination at levels of concern, the analytical data from the fieldwork was compared to applicable or relevant and appropriate requirements (ARARs), or other relevant guidance if no ARARs were available.

There are many contaminants left behind as a result of prior Site activity that may pose a risk to human health and/or the environment. The primary contaminant categories of concern at the Site are radionuclides and heavy metals.

Based upon the results of the RI, certain areas and media of the Site require remediation. These are summarized below. More complete information can be found in the RI and FFS Reports.

#### Physical Site Conditions

The four parcels of land that made up the Li Tungsten facility have been unused since the facility closed in 1985. Two of the buildings on Parcel A - the Dice Complex and the East Building - were razed and their demolition debris disposed off-Site in 1998 by EPA during the removal action. The Dice Complex alone occupied an area of approximately 100,000 square feet. The property remains fenced (except for Parcel C', which was purchased in the latter stages of Li Tungsten's history and never used during facility operations) and placarded with warnings regarding the hazardous nature of the Site. EPA has removed all equipment and debris from the remaining buildings on Parcel A, i.e., the Carbide Building, Lab/Wire Building, and Loung Building. The structural stability of these buildings is considered borderline. A few areas within the Carbide Building and Lab/Wire Building are contaminated with radioactivity.

The middle of Parcel B and the northern end of Parcel C were used as dumping areas for spent ore and other metals-processing

residues. Consequently, some of the highest concentrations of the heavy metals and radionuclides of concern were recorded there.

Of the two remaining buildings on Parcel C, the Dickson Warehouse is relatively structurally sound and is presently being used by EPA to temporarily stockpile approximately 5,000 cubic yards of radioactive ore/slag residuals. The Benbow Building still contains a bank of hydrogen reduction furnaces, which represents the only significant plant equipment still on-Site.

The Captain's Cove property, large parts of which were wetlands prior to being filled in the 1960's and 70's, still has the rubble from two demolished four-story condominium buildings remaining on the eastern end of the property. While these buildings were being erected in the early 1980's by Village Green Realty, the NYSDEC determined that the property should be investigated for releases of hazardous materials, most notably methane and radioactivity. Wooden pilings at several other locations on the property mark the spots where additional condominium structures were to be built. Two man-made, lined ponds are located along the northeastern boundary of the Captain's Cove property, and a paved road enters the property off Garvies Point Road and leads to a parking lot and a demolished condominium sales office near the property's western end. The Captain's Cove property is completely fenced along adjacent land areas; however, the property is not fenced along its southern border with the Creek. There is limited signage warning of the hazardous nature of the property.

#### Geology and Hydrogeology

There are two discrete aquifers in the Glen Cove region - the Upper Glacial and the Lloyd Aquifers. In addition to these, local bodies of perched groundwater occur above the water table, typically atop lenses of clay. In 1978, the aquifer system underlying Nassau and Suffolk Counties was designated a sole source aquifer by EPA in order to safeguard the capability of these aquifers to provide potable water.

The Upper Glacial Aquifer, which is not a source of potable water in the vicinity of the Site, consists of permeable deposits that occur below the water table. The water table at the Site occurs from mean sea level (MSL) to approximately 60 feet above MSL. Recharge is entirely from precipitation occurring mostly during the late fall and winter when plant growth is dormant. Regionally, shallow groundwater discharges to streams, springs, and Long Island Sound and its harbors. No connection or discharge from the Upper Glacial Aquifer to the deeper Lloyd Aquifer exists in the Site area. Groundwater movement in the Upper Glacial Aquifer is generally to the south, with shallow discharge to Glen Cove Creek (FIGURE 4).

The clay member of the Raritan Formation is a confining, or relatively impermeable, unit that overlies the Lloyd Aquifer. The Port Washington unit occurs above, and is contiguous with, the clay member in many places. Together, these units form an effective confining unit separating the Lloyd Aquifer from the Upper Glacial Aquifer in the Glen Cove Region. The thickness of the confining unit is about 112 feet beneath the Site, based on the log of Well 1917 (the industrial well located on Parcel A). In the Glen Cove region, discontinuous beds of low permeability sediments limit the amount of water which can be pumped from the Upper Glacial Aquifer; hence, Glen Cove's three municipal water supply wells tap the deeper Lloyd aquifer in excess of 250 feet below MSL. The three wells are located approximately one mile hydraulically up gradient of the Site to the east of the Creek (FIGURE 5). The potable water supply drawn from these wells is tested in accordance with State law on a regular basis.

#### Ecology

Wetlands at the Li Tungsten facility appear to be associated with natural drainage patterns and impoundments due to human activity. No wetland areas are depicted on either the U.S. Fish and Wildlife Service's National Wetlands Inventory Map or the NYSDEC Freshwater Wetland Map (Sea Cliff, NY quadrangle). However, four delineated areas meet the federal criteria for wetland designation on Parcels B and C. Cumulatively, they occupy one acre of the facility.

There are two surface water systems on the Li Tungsten facility property. A drainage ditch located on the eastern half of Parcel B runs south approximately two-thirds the length of the Parcel. A small pond is located approximately midway along the drainage ditch. A series of drainage ditches on the western portion of middle Parcel C end in a pond.

At Captain's Cove, precipitation collects in two man-made interconnected retention basins on the northern border of the property, as well as in low-lying areas in the center of the property. Along the southern border of the property is a four-acre tidal wetland which is inundated at high tide. None of these wet areas are located in the two ore residual areas.

Numerous on-site wildlife observations have been made, including the direct observations of many waterfowl and wading birds, as well as red foxes and raccoons. No threatened or endangered birds, mammals, reptiles, amphibians, fish, or invertebrates inhabit this area. However, Hempstead Harbor is listed as a Waterfowl Nesting Area and a Significant Coastal Fish and Wildlife Habitat under New York State's Coastal Management Program.

Several areas on both Li Tungsten and the Captain's Cove properties were found to have possible cultural resource significance.

#### Soil, Sediment and Surface-Water and Groundwater Contamination

As a result of the field work and sampling exercises performed during the RI at Li Tungsten and the FFS at Captain's Cove, the nature and extent of various radiological and chemical contamination was further defined at these properties. A general discussion of these findings is presented below, organized by media, e.g., soil, groundwater, etc. and contaminant, e.g., volatile organics, heavy metals, radionuclides, etc. For a more complete examination of the analytical results of the RI and FFS, please see TABLES 1 through 4.

#### **Li Tungsten Facility**

##### Surface and Subsurface Soils

Volatile organic compounds (VOCs) detected during the RI at the Li Tungsten facility were limited to a few soil samples at low concentrations (less than 5 micrograms per kilogram, or  $\mu\text{g}/\text{kg}$ ) and at shallow depths (less than 4 feet below grade level, or bgl). VOCs were detected in three main areas: the northern portion of Parcel A; the southern portion of Parcel B; and the southern portion of Parcel C in the vicinity of the former aboveground fuel oil tank and Mud Pond. Semi-volatile organic compounds (SVOCs) were detected predominantly in the surface and subsurface soils on Parcel A, but also in the middle portion of Parcel B and the upper and lower portions of Parcel C. Concentrations of various SVOCs on Parcel A regularly exceeded 1,000  $\mu\text{g}/\text{kg}$ ; for example, the highest levels of benzo(a)anthracene were found in surficial soil at 3,100  $\mu\text{g}/\text{kg}$  and in borings around storm sewers at 9,900  $\mu\text{g}/\text{kg}$ . The levels of SVOCs on Parcels B and C were generally much lower; for example, the highest level of benzo(a)anthracene found outside of Parcel A was 360  $\mu\text{g}/\text{kg}$ , in a test pit on Parcel B. No SVOCs were detected in the four soil background samples. The three parcels were also sampled for pesticides and PCBs, which were predominantly found in the central portion of Parcel B, with the highest level of total PCBs detected in a soil boring at 15,890  $\mu\text{g}/\text{kg}$ . Pesticides were detected in only a few samples; the highest concentration reported was 70  $\mu\text{g}/\text{kg}$  for endrin on Parcel B.

Inorganics were widely detected in the soils and included antimony, arsenic, barium, copper, cobalt, chromium, lead, manganese, mercury, nickel, radium, thorium, uranium, vanadium, and zinc. In general, many of the individual inorganic constituents had vertical and horizontal distribution patterns that were similar to one another. For example, arsenic, antimony, chromium, and manganese were found at elevated concentrations in the middle and lower



portions of Parcel B, the upper portion of Parcel C and the lower portion of Parcel C in similar horizontal and vertical distribution patterns, with concentrations generally decreasing with increasing depths below 4 feet bgl. The highest concentration of antimony was 5,610 milligrams per kilogram, or mg/kg from a soil boring on Parcel B and 3,490 mg/kg from a soil boring on the lower part of Parcel C. The highest level of arsenic in soil was found in upper Parcel C at 6,300 mg/kg. The highest level of lead in soil was 6,100 mg/kg, also on upper Parcel C.

The radionuclides of concern include Uranium-238 ( $^{238}\text{U}$ ), Radium-226 ( $^{226}\text{Ra}$ ), Radium-228 ( $^{228}\text{Ra}$ ), Thorium-230 ( $^{230}\text{Th}$ ) and Thorium-232 ( $^{232}\text{Th}$ ). These are constituents of the ores processed at the Li Tungsten facility or otherwise waste products of the manufacturing processes there, and also detected at the facility within the top 4 feet bgl. The radionuclides  $^{238}\text{U}$ ,  $^{232}\text{Th}$ , and  $^{226}\text{Ra}$  were detected primarily in five main areas: outside the fence along Herhill Road in the northwest corner of Parcel A, the middle portion of Parcel B, the upper portion of Parcel C, the vegetated area north of the Dickson Warehouse on Parcel C, and the lower portion of Parcel C. The highest concentrations of  $^{238}\text{U}$  (470 picocuries per gram, or pCi/g) and  $^{226}\text{Ra}$  (250 pCi/g) were found on the upper portion of Parcel C, while  $^{232}\text{Th}$  was found at 220 pCi/g in the middle of Parcel C.

#### Groundwater

Three rounds of groundwater samples were collected in December 1996, January 1997, and October 1998. Thirty-two monitoring wells were sampled in each of the first two rounds. In the third round, only twenty-eight wells were sampled as a result of the decommissioning of four wells during earlier RI/FS and removal activities. Low-flow sample collection techniques were used during the third round to minimize turbidity and any resulting potential bias in analytical results.

Groundwater analytical results indicated that contaminants which were found in soil were also generally found in groundwater. SVOCs and pesticides were generally found in trace amounts, except in the four wells immediately north of the Mattiace Site; contamination found in these wells has resulted from past commercial operations on the Mattiace property and is now being remediated by EPA under the Mattiace Superfund cleanup program. PCBs were not detected in any groundwater samples.

The most concentrated plume of VOCs was detected in four wells immediately north of the Mattiace Site. This plume is attributable to the leaking underground storage tanks that were removed from the Mattiace Site by EPA in 1996/97; these tanks had concentrations of trichloroethylene (TCE) as high as 34,000 micrograms per liter, or

ug/L. EPA subsequently constructed a groundwater and soil treatment facility at Mattiace to remediate the source as well as to capture and treat the groundwater plume. The Mattiace Site remedial facility is presently in the start-up phase of operation. Another less concentrated plume of VOCs was also detected in the middle portion of Parcel A/lower portion of Parcel B, down gradient of the Crown Dykman State Superfund site, which is the suspected source. During the second round of sampling, the concentrations of TCE and the dry cleaning chemical tetrachloroethylene (PCE) were measured at 2,200 ug/l and 6,900 ug/l, respectively, in well GM-1 located on the northern part of Parcel A, directly across the street from Crown Dykman, a former dry cleaning facility. In the almost two years between the second and third sampling rounds, concentrations of VOCs have diminished in wells close to Crown Dykman, e.g., TCE decreased to 9 ug/l in GM-1. However, evidence that VOCs have increased in wells closer to the Creek, e.g., TCE in well MP-2D near the Creek has been measured sequentially at 87 ug/l, 96 ug/l, and 650 ug/l during the three sampling rounds, suggests that the bulk of the VOCs may have moved further south. The VOCs in groundwater under the Li Tungsten facility are not thought to have originated from the Li Tungsten operations. However, in response to the migrating plume of VOC contamination suspected of emanating from the Crown Dykman Site, the NYSDEC may require future access to portions of Parcel A. This is necessary to allow the State to address this migrating plume if a groundwater remedy is necessary. The preferred treatment alternative for this area will be detailed in the State's future Record of Decision for the Crown Dykman Site.

Inorganics of concern were detected in groundwater samples above EPA maximum contaminant levels (MCLs) in several locations, but in no clearly defined areal pattern. The vertical and horizontal distribution patterns for individual inorganics were similar. Most of the elevated levels were not significantly above MCLs, although levels of arsenic and antimony as high as 14,500 ug/l and 4,300 ug/l, respectively, were detected in a well near the former aboveground fuel oil tank on lower Parcel C. EPA's MCLs for arsenic and antimony are 50 ug/l and 6 ug/l, respectively. Radionuclides, although found to be above background in several wells on-Site, generally met or, in a few instances, only slightly exceeded standards. The elevated levels of radionuclides also do not appear to form a recognizable plume or pattern of contamination. In the third round of groundwater sampling, all of the radionuclides of concern met standards except for  $Ra^{228}$ , which in one well slightly exceeded the EPA standard for that contaminant.

#### Ponded Water and Wetlands

Seven water samples were collected from the ponds and wetland areas on Parcels A, B, and C. VOCs were not detected in surface water on Parcels B and C. SVOCs (e.g., bis(2-ethylhexyl)phthalate at 4 ug/l) exceeded the NYSDEC Class C Surface Water Standard of 0.6 ug/l on Parcel C. PCBs/pesticides (e.g., aroclor 1254/1260 at 3.8 ug/l and 4,4'-DDD at 9.1 ug/l) were detected in three locations in excess of NYSDEC Class D Surface Water Standards (total PCBs=0.01 ug/l and 4,4'-DDD=0.001 ug/l, respectively). A significant number of inorganics in the ponded water exceeded the State water quality standards and guidance values on Parcels B and C, the highest being arsenic, which was detected at 8,090 ug/l in ponded water on Parcel B. Radionuclides were generally found to be within surface water quality standards.

#### Pond/Wetlands Sediments

Eight sediment samples were collected from the ponds and wetland areas on parcels adjacent to surface water sample locations on Parcels A, B, and C. VOCs were generally detected in trace levels in most of these samples, although acetone was detected at a concentration of 240 ug/kg on Parcel B. SVOCs were generally detected in all the samples; the highest SVOC level detected was 290 ug/kg of benzo(a)anthracene. PCBs were detected in three of the eight sediment samples, with the highest level of 2,891 ug/kg total PCBs found in lower Parcel C. The NYSDEC screening level for total PCBs is 328 ug/kg, according to the NYSDEC Technical Guidance for Screening Contaminated Sediments.

Inorganics that were detected in significant concentrations in each of the eight sediment samples included antimony, arsenic, calcium, chromium, cobalt, copper, iron, lead, mercury, nickel, selenium, silver, sodium, and zinc. Arsenic, for example, was reported at a maximum concentration of 2,080 mg/kg on Parcel C. Radionuclides were found in low but significant concentrations on the lower part of Parcel C (two Mud Holes and Mud Pond); e.g., <sup>238</sup>U at 46 pCi/g.

Additionally, four storm sewer sediment samples were also collected from storm sewers on Parcel A. Trace levels of several VOCs were detected in each of the four storm sewer sediment samples. SVOCs were detected in each of the four storm sewer sediment samples in significant concentrations, e.g., 13,000 ug/kg of pyrene. PCBs were detected in each of the four storm sewer sediment samples at generally low levels, with a maximum of 853 ug/kg of total PCBs in a storm sewer on Parcel A.

Inorganics detected in significant concentrations in each of the four storm sewer sediment samples included antimony (maximum 477 mg/kg) and arsenic (maximum 454 mg/kg). Chromium, cobalt, copper,

iron, lead, mercury, nickel, selenium, silver, and zinc-were also detected in significant concentrations. Radionuclides were found in low but significant concentrations in all four storm sewer sediment samples, e.g.,  $^{238}\text{U}$  at 29 pCi/g.

#### **Captain's Cove Property**

##### Surface and Subsurface Soils

At the Captain's Cove property, a gamma survey as well as samples obtained from soil borings and monitoring wells confirmed that the radionuclides which were the focus of EPA's FFS were limited to two separate areas of the property, denoted as Area A (northwest corner) and Area G (east end). To develop a complete contaminant profile within the two radionuclide areas, EPA also sampled for a standard array of non-radioactive hazardous chemicals. VOCs were primarily limited to several samples in the northeast portion of Area A, generally in concentrations below 400 µg/kg, except for one subsurface soil sample containing chlorobenzene at 42,000 µg/kg. Seven SVOCs were detected at concentrations exceeding NYSDEC's recommended soil cleanup objectives identified in the Technical and Administrative Guidance Memoranda (TAGM) in six locations in Area A, four locations in Area G, and one location not associated with either area, e.g., benzo(b)fluoranthene at 1,200 µg/kg in SB-4 (soil boring no. 4). One sample from Area A and one from Area G had significant concentrations of total PCBs, i.e., SB-21 at 5,500 µg/kg in Area A, and TP-6 (test pit no. 6) at 12,000 µg/kg in Area G. Numerous inorganics were detected frequently in Areas A and G at concentrations exceeding NYSDEC's soil cleanup objectives, e.g., arsenic exceeded its TAGM value in 23 samples, with the highest measured concentration at 2,760 mg/kg in Area A.

In Area A, elevated concentrations (greater than 2.5 times background) of thorium and uranium series radionuclides were found in all five test pits and seven of the 15 soil/monitoring well borings. The remaining soil borings reflected radionuclide concentrations that ranged from background (generally about 1 pCi/g for each of the radionuclides of concern) to less than 2.5 times background. The maximum concentrations of radionuclides in test pit samples were found at 2 to 6 feet bgl in TP-3. At this location, uranium series concentrations ranged from 191 to 494 pCi/g, and thorium series concentrations ranged from 56 to 113 pCi/g. Elevated concentrations of radionuclides were also found in soil boring samples. Maximum concentrations of 211 to 273 pCi/g for the uranium series and 70 to 126 pCi/g for the thorium series radionuclides were measured at a depth of 6 to 7 feet bgl in SB-13. Several soil borings exhibited contamination at similar depths throughout Area A.

In Area G, concentrations of thorium and uranium series radionuclides greater than 5 pCi/g were found in both test pits (TP-5 and TP-6) and five of the eight soil/monitoring well borings. The remaining three soil borings reflected radionuclide concentrations that ranged from background to less than 2.5 times background. In samples collected from the test pits, the highest concentrations of  $^{226}\text{Ra}$  and  $^{228}\text{Ra}$  were found at 4 to 6 feet bgl in TP-6 and ranged from 13 to 28 pCi/g and 4 to 6 pCi/g, respectively. In the soil borings, the highest concentrations of  $^{226}\text{Ra}$  and  $^{228}\text{Ra}$  were found at 6 to 8 feet bgl in SB-8 and measured 169 pCi/g and 49 pCi/g, respectively. The highest radionuclide concentration was 1,041 pCi/g of  $^{234}\text{U}$  measured in SB-23.

#### Groundwater

Eleven wells were sampled as part of one round of groundwater sampling performed at Captain's Cove. The objective of the sampling was to assess whether the groundwater has been impacted by the radionuclides of concern; however, samples were also analyzed for other chemical categories, such as VOCs, heavy metals, pesticides/PCBs, etc. The highest concentrations of the uranium (7 picoCuries per liter, or pCi/L) and thorium (8 pCi/l) series radionuclides were measured in MW-7 and MW-2, respectively. The highest value for the sum of  $^{226}\text{Ra}$  and  $^{228}\text{Ra}$  was 4.83 pCi/l measured in MW-3. The MCL for the sum of  $^{226}\text{Ra}$  and  $^{228}\text{Ra}$  is 5 pCi/l and the gross alpha MCL is 15 pCi/l. While there are no specific drinking water standards for uranium and thorium, thorium concentrations at the Site do not cause contravention of the gross alpha MCL.

Several wells on the property also were contaminated with significant levels of nonradioactive hazardous substances, such as VOCs and inorganics. A total of eight VOCs were detected in significant concentrations in the northeast part of the property, and are likely part of the plume related to the Mattiace Site. SVOCs and PCBs/pesticides were generally either not detected or found at low levels in no particular pattern. Inorganic compounds such as arsenic, antimony, selenium, iron, and manganese were detected in significant amounts in several wells.

#### Ponded Water

Three samples were collected from each of the two retention ponds and from a topographic depression in the southwest portion of the Captain's Cove property. Radionuclides were found to be within surface water quality standards. No VOCs, SVOCs, pesticides, or PCBs were detected in the three surface water samples. Many of the inorganics detected in the topographic depression exceeded New York State or EPA Ambient Water Quality Criteria.

### Sediments

Seven sediment samples were collected on the property; five from the large wetland area along the southern border, one from a retention pond area, and one from the topographic depression in the southwest corner. The concentrations of radionuclides in all sediment samples were within the range of background concentrations. No SVOCs or PCBs were detected in sediment samples. While VOCs and pesticides were found in the topographic depression, the levels were generally low. Several inorganics, such as iron, mercury, lead, silver, and zinc were detected in the topographic depression at concentrations significantly above background values.

### Glen Cove Creek

No samples of sediments or surface water were collected from Glen Cove Creek as part of the Li Tungsten field work, as there is a routine monitoring program for the entire Creek being performed pursuant to the June 1991 ROD for the Mattiace Superfund site. Given the industrial nature of this area, there are many potential sources of contamination in the Creek. The monitoring program was not designed to identify the specific sources of specific contaminants; it consists of four locations along the length of the creek which are analyzed for VOCs, SVOCs, inorganic contaminants, pesticides and PCBs. The results of the first two monitoring events are provided in the RI report, while the results for the third monitoring event are provided in the FS. The third event, conducted in Summer 1998, generally support a decreasing trend in overall contaminant concentrations in the Creek sediments over the past nine years.

The US Army Corps is about to initiate the second phase of the dredging of the Creek as part of the Glen Cove Creek Federal Navigation Project authorized by the Rivers and Harbors Act. The "maintenance dredging" is intended to restore adequate depth to the channel to provide safe navigation for barges and other vessels. The second phase of the project entails maintenance dredging of the Creek from mile 0.3 to mile 1.0; the entire width of the Creek fronting Parcel A will be dredged to a depth of 8 feet, with the exception of a very small area of Creek fronting the westernmost side of the Parcel, which already provides an 8 foot channel. Approximately 35,000 cy of material will be dredged and transported by pipeline to Parcel A for de-watering. The first phase of the project performed in 1996 was conducted at the mouth of the Creek (mile 0 to mile 0.3); approximately 12,000 cy of sediment was removed as part of this effort. Prior to performing the first phase of the dredging, the Army Corps sampled the length of the Creek in order to evaluate disposal options for the removed sediment; these results are provided in the FS.

The beneficial impact of the dredging of the mouth of the Creek was clearly evident in the third sampling event. The sampling results